DOCUMENT RESUME

ED 482 690 SP 041 860

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TITLE Active Learning and Preservice Teacher Attitudinal Change.
PUB DATE 2003-11-06
NOTE 23p.; Paper presented at the Annual Meeting of the Mid-South Educational Research Association (Biloxi, MS, November 5-7, 2003).
PUB TYPE Reports - Research (143) -- Speeches/Meeting Papers (150)
EDRS PRICE EDRS Price MF01/PC01 Plus Postage.
DESCRIPTORS Active Learning; *Constructivism (Learning); Elementary Education; *Experiential Learning; Higher Education; Methods Courses; Preservice Teacher Education; Science Instruction; *Self Efficacy; *Student Teacher Attitudes

ABSTRACT

This study examined the relationship between a constructivist/hands-on elementary methods course in science and preservice teachers' dispositions toward science content and teaching. The study investigated how an active learning and teaching style in science methods courses would affect preservice teacher self-efficacy and attitude. Data came from preservice teachers' responses to two instruments (a pretest of general science knowledge and the Science Teaching Efficacy Belief Instrument, completed at the beginning and the end of the course). The data pool consisted of students' responses to the instruments as administered in six semesters and nine sections of the methods course entitled "Science for the P-8 Teacher". Results indicated that preservice teachers' attitudes were more positive at the end of the course. Negative attitudes seemed to be maintained in the semester that had fewer hands-on/open-ended activities. Preservice teachers seemed to enter the class with high outcome expectancies. Items revealed a slightly higher, but significant, change in teacher attitudes. (Contains 31 references.) (SM)

Active Learning and Preservice Teacher Attitudinal Change

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A paper presented at the annual meeting of the MSERA,
Biloxi, November 6, 2003

Statement of the Problem

The purpose of this study is to describe the relationship between a constructivist/hands-on elementary methods course in science and preservice teacher disposition toward science content and teaching. The major question of this study is as follows: How will an active learning and teaching style in science methods courses affect preservice teacher self-efficacy and attitude?

Review of the Literature

The literature reveals at least three factors that influence the effectiveness of teacher education programs, and particularly, the nature of elementary science methods courses. These factors include: belief and values of the institution and the methods instructor, preservice teacher's beliefs about science and science instruction and the active/constructivist teaching environment.

Institutional Beliefs and Values

The beliefs and values of the teaching institution and methods instructor produce a significant element of influence on methods courses, namely, the responsibility to determine criteria used to verify preservice teacher readiness (Evertson, Hawley, and Zlotnik, 1984; Huinker and Madison, 1995). Bauer (1990) and Beal (1987) agree that there is a growing problem with institutional belief and realistic schooling. Instructional content presented by professors of education may not be compatible with current school practice or standards. In addition, the pedagogy modeled by professors has a definitive influence on prospective teachers' ways of teaching. Heikkinen, McDevitt, and Stone (1992) report that course instructors tend to teach as they were taught using lectures and rote memorization of disconnected facts. On the other hand, inquiry into pedagogical problems (Harrington & Garrison, 1992; Riley, 1986), provision of contextually rooted opportunities that stimulate preservice teacher's learning

(Morrell & Carroll, 2003; McLaughlin & Talbert, 1993: Yager, 1990), and selection of teaching techniques for conveying content knowledge to students (Gomez & Housner, 1992) are effective influences of the institution and/or instructor.

Prospective Teachers' Beliefs

Preservice elementary and middle school teachers enter the methods classroom with preconceived notions and strong beliefs concerning science content and what science teaching means to them. Many preservice teachers are not confronted with their own ability to teach science and mathematics until the methods courses. Responses and reactions to such curricular requirements seem to be consistent with situation-specific belief traits as researched by Bandura (1977) in that many preservice teachers enter science methods courses judging themselves at that moment to be incapable of teaching science. According to Huinker and Madison (1995), Balas (1998), and Sottile, Carter, and Watson (2001) the levels of active learning experiences in science influence the potential teacher's ability to perceive themselves as successful science instructors. To that end, this study seeks to describe the levels of self-perception and self-efficacy influenced by active teaching and learning of a constructivist methods course as revealed through the use of a self-efficacy rating instrument the STEBI –B (Riggs and Enochs, 1989; Enoch and Riggs, 1990).

As a whole preservice teachers have pursued minimal efforts in science experiences yet find themselves in specialized courses that not only require deeper science concept knowledge but the pedagogical practices as well. Research has shown that preservice teachers also enter the methods classroom with alternative understanding of science concepts despite meeting science course requirements placed by state licensure regulations (Cakiroglu and Boone, 2002; Schoon and Boone, 1998) and in some cases are holding alternative understandings maintained by past teachers (Berliner and Casanova, 1987; 1989). The dilemma creates a tremendous opportunity for methods instructors to provide attitude and belief altering experiences leading to better prepared and self-efficacious teachers (Huinker and Madison, 1997; Mulholland and Wallace, 2001). Avoidance of selecting additional science course work when given opportunities to plan future learning seem to be outcomes of negative experiences with science content, personality issues with science instructors, and a consistent experience of less than effective science instruction.

Given then that preservice teachers enter methods classes with "shaped" understandings and beliefs about science serious consideration must be made as to how change can occur. The prospective teacher's basic beliefs concerning teaching and learning affect the ways in which construction of instructional knowledge transpires during a methods course. Cobb (1994) explains that students will actively construct knowledge as they strive to make sense of their world. Construction of knowledge is appropriate in science methods courses as long as the program assists the preservice teacher in making sense of the world of teaching and learning science. According to Cheung (1990) and Cobb (1994), prior knowledge is constructed socially and personally, and future learning is guided by these prior conceptions and negotiated in learning contexts. The ignoring of these prior concepts by science methods instructors may lead to less effective elementary science teachers or a disappointing lack of effectual change particularly in self-efficacy. Preservice teachers can only interpret the new environment or culture in terms of their current knowledge structures (Ramey-Gassert, Shroyer and Staver, 1996; Wilson, 1996; Finson, Riggs, and Jesunathadas, 2000).

Constructivist/Active Teaching Environment

Although the methods course in science is not a content course in pure science, there is a culture established that integrates science and the strategies for teaching science. For example, the use of constructivist philosophies along with hands-on experiences presented in a methods class may establish the nature of science in a different way with different outcomes in comparison to a more traditional process-product paradigm driven course that defines the nature of science through verification, theory, and exposure to teacher resources.

The hands-on activities and procedural explanations afforded in science methods courses should not be "islands unto themselves." Learning activities, especially in science should be inseparable from explicit constructivist cognitive processes (Scharmann and Hampton, 1995; Cobb, 1994). When thinking and problem solving are treated as separate domains from hands-on activities/experiments preservice teachers have increased difficulty assimilating what they "experience" into daily teaching life (Champagne, Klopfer, & Gunstone, 1982). There is evidence that teachers who hold to the perception that obscure connections exist between an activity, content knowledge, and construction of thought from prior knowledge require more time and effort to make their science instruction meaningful student learning.

The extent to which methods courses focus on constructivist learning skills and transcend beyond the "telling" of learning theories and practices will determine the "real" nature of science. The real nature defines or describes authentic practice in elementary science teaching and learning. Authentic practice in an active constructivist methods course as in any course is challenged by two issues as presented by Brown, Collins, and Duguid (1989), include: 1. ...students are too often asked to use the tools of a discipline without being able to adopt its culture. 2. ... it is common for students to acquire, algorithms, routines, decontextualized definitions that they cannot use and that, therefore, lie inert. Construction of instructional knowledge becomes authentic practice when culture and contextualized meaning are adopted. Authentic practice, when perceived as an indispensable part of the construction of instructional knowledge, enables the science preservice teacher to gain an implicit sense of suitable instructional methods (McLaughlin & Talbert, 1993). In addition authentic practice permits the preservice teacher to do more than pass exams; it gives them the confidence to legitimize conceptual tools gained in methods courses that are consistent with science content and the nature of science (Brown et al., 1989; McLaughlin & Talbert, 1993). Strong evidence in research provides descriptions of authentic practice of pedagogy as correlated to a greater sense of preservice teacher teaching success (de Laat and Watson, 1995; Wilson, 1996; Cannon, 1999; Mulholland and Wallace, 2001).

In summary, the status of preservice teacher attitude toward science education is the first reactive door that the student opens when considering the science classroom and instruction. Those challenges presented by the institution and the methods instructor must incorporate authentic practices in both pedagogy and science thinking and learning. The constructivist approach provides both avenues of processing out negative self-efficacy and the fear of science.

Data Source and Procedure

The data for this research report originated from pre-service teacher responses collected from two instruments: A pre-test of general science knowledge and the Science Teaching Efficacy Belief Instrument: STEBI-B (Enoch and Riggs, 1990). The data pool consisted of the students' responses to the instruments as administered in 6 semesters and 9 sections of the methods course; *Science for the P-8 Teacher*. To measure student knowledge and self-efficacy students completed the STEBI-B on the first day and on the last day of the class each semester. The general science knowledge instrument was completed on the first day as well but after the STEBI-B. The majority of the prospective teachers were also taking the pre-student teaching course and lab in conjunction with the methods course. Pre-student teaching involved additional field experiences each week totaling 40 hours of in-class experiences for the semester. The principle researcher for the use and interpretation of the STEBI-B and the pretest of science knowledge was the professor of the course. The research report data originated from the responses to the 23 item Likert-scale questionnaire. The numbers of participants in the Pre-test groups were: N=204; and in the Post-test group N=232 . The number of questionnaires that could be matched pre to post represented N=138 or 69 individuals. The participants represented diverse science experiences from across the country with majors in Early Childhood or Middle Level education.

The Instrument Description

Consistent with valid self-efficacy research the instrument used in the study is the STEBI- form B- Science Teaching Efficacy Belief Instrument (Enochs and Riggs, 1990). Used with personal permission from Dr. Enochs the instrument contains 23 items with a 5-point Likert rating scale; with Strongly Agree (5), Agree (4), Neutral (3), Disagree (2) and Strongly Disagree (1). Of the 23 items 13 are considered to measure PSTE – personal science teaching efficacy and the remaining 10 measure STOE – Science teaching outcome expectancy. Each expectancy is computed with individual scales. High scores in the PSTE scale relative to other respondents indicate a strong personal belief in one's own efficacy as a science teacher, and high scores on the STOE indicate high expectations on the outcome of science teaching. A copy of the instrument as given to each class is provided in appendix-A.

Science for the P-8 Teacher

The pre-service teacher performance in the science methods course is a program requirement that generally falls in the first semester of the teaching candidate's senior year followed by a semester of student teaching. In addition, the course is taken concurrently with ELED 408-*Integrating Elementary School Mathematics and Science*. Such a combination of courses provides a two-hour block of class time on Mondays and Wednesdays. The block of time allows for opportunities to participate in laboratory/experiential lessons in science content development as well as time for practice in school settings. The course description written in the professor's course syllabus and adapted from the University's catalogue reads as follows:

> A science concept and content course designed especially for P-8 school teachers. Science literacy in an evolving technological society will be developed. Science will be presented as an active, constructive, and cooperating process involving experimentation, investigation, analysis, inquiry, and problem solving techniques. The scope of the course will involve the biological, earth, and physical sciences. (pg 1 of course syllabus)

Portions of the curriculum involving physical science as seen in table 1 include the instructor's sequences of constructivist approach teaching/learning events:

Table 1

Lesson activity	Intended Learning Theory
Draw a Scientist	Prior Knowledge/Scaffold watching
Dancing Matchheads	Hypothesis forming; "One right answer" syndrome and Applying the proper remedy
Pennies on a card	Agreeing on a good guess; immediate feedback; Concrete Operationalism – Formal Operations
Glugging and other measurements	Did my head just glug?.. Nature of science and "Busting" misconceptions
Egg Drop Competition	Trusting your own confidence, trusting cooperative approaches… yes I will provide you with no answers
Paper Flyers	Assessment vs. success… Synthesis Bloomers

Data Analysis

Statistical

Statistical analysis of simple t-tests and paired-analysis were calculated between Pre and Post groups for each item on the STEBI-B questionnaire at the .05 alpha level of significance. Comparisons were made between groups using the *SPSS student version 10* software. Findings revealed significant differences in many questionnaire items with T-test of 0.0013 at the .05 alpha level. The chart for statistical findings for paired samples test is in Appendix B as well as the comparison across groups independent samples test. The analysis revealed that seven items on the instrument showed significant difference statistically for the paired samples with N=69. These items were numbers 1, 6, 15, 17, 18, 20, and 21. Five of these seven items describe the greater significant change in the PSTE – Personal Science Teaching Efficacy. On the other hand, 8 items, numbers 1, 5, 6, 12, 17, 18, 19, and 23 showed significance for the comparison across groups with a total N of 436. Again, but more definitively, the items of significance point toward a change in the PSTE with six of the eight items reporting in the scale. It seems students participating in a more constructivist methods course enter with poorer views of themselves as scientists but leave with higher self worth in:

#1. When a student does better than usual in science, it is often because the teacher exerted a little extra effort.

#6. I will not be very effective in monitoring science experiments.

#17. I will find it difficult to explain to students why science experiments work.

#18. I will typically be able to answer student's science questions.

Qualitative Analysis of Anecdotal Records

Further anecdotal observation of student behaviors in science methods courses seem to bring to the forefront the following questions that perhaps shed light on the level of potential teacher's self-efficacy:

- Why do we have to take this course if we are going to teach reading?
- I am not good in science. My worst grades were in science.
- Do we have to buy the books for this class? Do we have to buy the activities book?
- I won't ever teach science because I am going to teach...
- Dr. J. needs to learn that there are other ways of learning than critical thinking.
- My teachers always gave us busy work in science.

Consequently questions and statements that should be addressed by methods instructors that reveal opportunities of understanding and changing the preservice teacher's self-efficacy and attitude toward science teaching include:

- Why do elementary teacher candidates avoid science?
- Why do preservice teachers perceive themselves to be "dumb" when it comes to science?
- What science experiences are they bringing with them to the course?
- What are they really afraid of?
- What do they know vs. understand about science concepts?

More often than not Preservice teachers have a fear of the subject and enter the methods class with ideas that they will not be the ones to teach science. In several teaching preparation programs for example reading instruction becomes a central focus in the students mind.

Consistent with Piagetian theories preservice teachers create scaffolding for the topic or subject they have been convinced or desire to teach perhaps inadvertently from methods courses. In that sense they do not transfer new learning to other areas of learning.

Conclusions

Preservice teachers' attitudes were more positive at the end of the course. Negative attitudes seem to be maintained in the semester that had fewer hands-on/open-ended activities. Interpretive descriptive analyses were made within and across groups to gather insight to the significant differences in responses. Results show a definitive effort of the participants to answer truthfully rather than accommodatingly. The greatest significance was found in items concerning personal science teaching efficacy. Preservice teachers seem to enter the class with high outcome expectancies. Items revealed a slightly higher but significant change in teacher attitudes. The participant structure of the constructivist methods science course is most often a thought driving process that is counterintuitive to the past science experiences. The clash of the two cultures opens the door for effectual teaching opportunities that make for better thinkers and leads to more effective and confident preservice teachers in connection with experimentation and the nature of science.

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APPENDIX A
The STEBI-B Instrument

STEBI Form B by Enochs and Riggs (1990)

Please indicate the degree to which you agree or disagree with each statement below by circling the appropriate letters to the right of each statement.

SA= Strongly Agree
A= Agree
UN= Uncertain
D= Disagree
SD= Strongly Disagree

1. When a student does better than usual in science, it is often because the teacher exerted a little extra effort.	SA A UN D SD
2. I will continually find better ways to teach science.	SA A UN D SD
3. Even if I try very hard, I will not teach science as well as I will most subjects.	SA A UN D SD
4. When the science grades of students improve, it is often due to their teacher having found a more effective teaching approach.	SA A UN D SD
5. I know the steps necessary to teach science concepts effectively.	SA A UN D SD
6. I will not be very effective in monitoring science experiments.	SA A UN D SD
7. If students are underachieving in science, it is most likely due to ineffective science teaching.	SA A UN D SD
8. I will generally teach science ineffectively.	SA A UN D SD
9. The inadequacy of student's science background can be overcome by good teaching.	SA A UN D SD
10. The low science achievement of some students cannot generally be blamed on their teachers.	SA A UN D SD
11. When a low achieving student progresses in science, it is usually due to extra attention given by the teacher.	SA A UN D SD
12. I understand science concepts well enough to be effective in teaching elementary science.	SA A UN D SD
13. Increased effort in science teaching produces little change in some students' science achievement.	SA A UN D SD
14. The teacher is generally responsible for the achievement of students in science.	SA A UN D SD
15. Student's achievement in science is directly related to their teacher's effectiveness in science teaching.	SA A UN D SD
16. If parents comment that their child is showing more interest in science at school, it is probably due to the performance of their child's teacher.	SA A UN D SD
17. I will find it difficult to explain to students why science experiments work.	SA A UN D SD
18. I will typically be able to answer student's science questions.	SA A UN D SD

19. I wonder if I will have necessary skills to teach science.	SA A UN D SD
20. Given a choice, I will not invite the principal to evaluate my science teaching.	SA A UN D SD
21. When a student has difficulty understanding a science concept, I will usually be at a loss as to how to help the student understand it better.	SA A UN D SD
22. When teaching science, I will usually welcome student questions.	SA A UN D SD
23. I do not know what to do to turn students on to science.	SA A UN D SD

APPENDIX B
STATISTICAL OUTPUT REPORTS

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
					95% Confidence Interval of the Difference				
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper			
Pair 1	A1 - B1	-.61	1.40	.17	-.94	-.27	-3.623	68	.001
Pair 2	A2 - B2	7.25E-02	.75	9.07E-02	-.11	.25	.799	68	.427
Pair 3	A3 - B3	2.90E-02	.79	9.45E-02	-.16	.22	.307	68	.760
Pair 4	A4 - B4	-7.25E-02	.77	9.31E-02	-.26	.11	-.779	68	.439
Pair 5	A5 - B5	-.35	1.63	.20	-.74	4.48E-02	-1.768	68	.082
Pair 6	A6 - B6	.32	1.32	.16	1.07E-03	.64	2.002	68	.049
Pair 7	A7 - B7	-.13	1.07	.13	-.39	.13	-1.013	68	.315
Pair 8	A8 - B8	.00	.69	8.26E-02	-.16	.16	.000	68	1.000
Pair 9	A9 - B9	-.19	.86	.10	-.40	1.87E-02	-1.815	68	.074
Pair 10	A10 - B10	5.80E-02	1.12	.14	-.21	.33	.429	68	.669
Pair 11	A11 - B11	.13	1.08	.13	-.13	.39	1.000	68	.321
Pair 12	A12 - B12	-5.80E-02	1.14	.14	-.33	.21	-.424	68	.673
Pair 13	A13 - B13	.25	1.09	.13	-1.55E-02	.51	1.877	68	.065
Pair 14	A14 - B14	-2.90E-02	.97	.12	-.26	.20	-.248	68	.805
Pair 15	A15 - B15	.14	.91	.11	-7.41E-02	.36	1.320	68	.191
Pair 16	A16 - B16	-4.35E-02	.72	8.62E-02	-.22	.13	-.504	68	.616
Pair 17	A17 - B17	-.26	.99	.12	-.50	-2.19E-02	-2.178	68	.033
Pair 18	A18 - B18	-.16	1.02	.12	-.41	8.65E-02	-1.294	68	.200
Pair 19	A19 - B19	4.35E-02	1.28	.15	-.26	.35	.283	68	.778
Pair 20	A20 - B20	-.28	1.10	.13	-.54	-1.19E-02	-2.086	68	.041
Pair 21	A21 - B21	-.25	.77	9.33E-02	-.43	-6.03E-02	-2.642	68	.010
Pair 22	A22 - B22	2.90E-02	.73	8.75E-02	-.15	.20	.331	68	.742
Pair 23	A23 - B23	8.70E-02	1.26	.15	-.22	.39	.575	68	.567

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
ITEM_1	Equal variances assumed	2.938	.088	-3.694	247	.000	-.39	.11	-.60	-.18
	Equal variances not assumed			-3.703	244.371	.000	-.39	.11	-.60	-.18
ITEM_2	Equal variances assumed	.142	.707	-1.773	247	.077	-.14	8.04E-02	-.30	1.58E-02
	Equal variances not assumed			-1.759	231.565	.080	-.14	8.11E-02	-.30	1.72E-02
ITEM_3	Equal variances assumed	.362	.548	-1.311	247	.191	-.15	.11	-.38	7.57E-02
	Equal variances not assumed			-1.309	240.604	.192	-.15	.12	-.38	7.61E-02
ITEM_4	Equal variances assumed	2.283	.132	-.772	247	.441	-6.40E-02	8.30E-02	-.23	9.94E-02
	Equal variances not assumed			-.768	236.303	.443	-6.40E-02	8.34E-02	-.23	.10
ITEM_5	Equal variances assumed	.998	.319	-11.251	247	.000	-1.24	.11	-1.45	-1.02
	Equal variances not assumed			-11.103	223.007	.000	-1.24	.11	-1.45	-1.02
ITEM_6	Equal variances assumed	11.629	.001	-3.076	247	.002	-.29	9.39E-02	-.47	-.10
	Equal variances not assumed			-3.098	246.742	.002	-.29	9.32E-02	-.47	-.11
ITEM_7	Equal variances assumed	.156	.694	-.606	247	.545	-6.74E-02	.11	-.29	.15
	Equal variances not assumed			-.607	243.720	.544	-6.74E-02	.11	-.29	.15
ITEM_8	Equal variances assumed	5.215	.023	-1.143	247	.254	-9.59E-02	8.39E-02	-.26	6.93E-02
	Equal variances not assumed			-1.128	222.837	.260	-9.59E-02	8.50E-02	-.26	7.17E-02
ITEM_9	Equal variances assumed	.371	.543	-.293	247	.769	-2.59E-02	8.82E-02	-.20	.15
	Equal variances not assumed			-.291	231.068	.771	-2.59E-02	8.89E-02	-.20	.15

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference Lower	Upper
ITEM_10	Equal variances assumed	.093	.760	.404	247	.687	4.86E-02	.12	-.19	.29
	Equal variances not assumed			.404	242.539	.687	4.86E-02	.12	-.19	.29
ITEM_11	Equal variances assumed	.000	.992	-.747	247	.456	-7.64E-02	.10	-.28	.13
	Equal variances not assumed			-.744	237.570	.458	-7.64E-02	.10	-.28	.13
ITEM_12	Equal variances assumed	5.807	.017	-7.120	247	.000	-.77	.11	-.98	-.56
	Equal variances not assumed			-7.144	245.105	.000	-.77	.11	-.98	-.56
ITEM_13	Equal variances assumed	5.590	.019	1.301	247	.195	.16	.12	-8.10E-02	.40
	Equal variances not assumed			1.290	231.802	.198	.16	.12	-8.31E-02	.40
ITEM_14	Equal variances assumed	1.211	.272	-1.090	247	.277	-.11	.10	-.32	9.20E-02
	Equal variances not assumed			-1.096	246.103	.274	-.11	.10	-.32	9.10E-02
ITEM_15	Equal variances assumed	1.739	.189	.515	247	.607	4.92E-02	9.54E-02	-.14	.24
	Equal variances not assumed			.510	226.167	.611	4.92E-02	9.65E-02	-.14	.24
ITEM_16	Equal variances assumed	.864	.354	.155	247	.877	1.32E-02	8.54E-02	-.16	.18
	Equal variances not assumed			.155	241.486	.877	1.32E-02	8.55E-02	-.16	.18
ITEM_17	Equal variances assumed	.071	.790	-2.955	247	.003	-.33	.11	-.54	-.11
	Equal variances not assumed			-2.949	240.415	.004	-.33	.11	-.54	-.11
ITEM_18	Equal variances assumed	3.448	.065	-4.284	247	.000	-.39	9.03E-02	-.56	-.21
	Equal variances not assumed			-4.291	243.777	.000	-.39	9.02E-02	-.56	-.21

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
ITEM_19	Equal variances assumed	.009	.926	-4.755	247	.000	-.62	.13	-.88	-.37
	Equal variances not assumed			-4.747	240.613	.000	-.62	.13	-.88	-.37
ITEM_20	Equal variances assumed	.000	.984	-1.320	247	.188	-.16	.12	-.39	7.76E-02
	Equal variances not assumed			-1.317	240.113	.189	-.16	.12	-.39	7.81E-02
ITEM_21	Equal variances assumed	.037	.847	-.866	247	.387	-7.95E-02	9.18E-02	-.26	.10
	Equal variances not assumed			-.863	238.802	.389	-7.95E-02	9.21E-02	-.26	.10
ITEM_22	Equal variances assumed	.316	.575	.768	247	.443	7.39E-02	9.62E-02	-.12	.26
	Equal variances not assumed			.759	227.104	.448	7.39E-02	9.73E-02	-.12	.27
ITEM_23	Equal variances assumed	17.154	.000	-6.341	247	.000	-.75	.12	-.98	-.52
	Equal variances not assumed			-6.419	246.550	.000	-.75	.12	-.98	-.52

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