

1990 and 2004 Arkansas Middle Level Survey Comparison: A Statistical Analysis of the
Data

Terry H. Stepka and Gregory B. Meeks

Arkansas State University

Abstract

This paper examines the progress of one state in implementing the middle school concept. Results of a survey distributed in 1990 were compared to results of a similar survey distributed in the spring of 2004. Responses from principals to survey items dealing with the concept that adolescents are unique in reference to other age groups emotionally, intellectually, physically, and socially to the needs of implementing and sustaining middle school concepts were compared from 1990 and 2004. While some survey items showed no significant differences in the responses from the two groups, it may be possible to posit that the two groups of principals still feel that adolescents are unique compared to other age groups. Other survey items did display statistically significant differences between the two groups, which may suggest the stage of the middle level concept. Progress or the lack thereof has been noted with each survey item. Implications from this survey can serve to heighten awareness and continue to improve the quality of middle level education.

In January of 1990, the *Arkansas Middle Grade Policy and Practice Task Force* commissioned a survey to assess the status of middle level education in the State of Arkansas. The survey was distributed to superintendents and principals to all schools with grades five to nine. Six hundred surveys were distributed and three hundred and forty-three surveys were returned for a return rate of 57.17 percent.

In the spring of 2004, the Arkansas Association of Middle Level Educators and the Arkansas Association of Middle Level Administrators surveyed all of the principals of Arkansas public schools housing fifth through ninth graders. This survey was modeled after the 1990 survey. The 2004 mailing was distributed to 301 principals. Seventy-one surveys were returned for a return rate of 23.6%. Although, the 2004 survey generated a smaller return rate than the 1990, Alreck and Settle (1985) indicates that mail surveys with response rates over thirty percent are rare.

The purpose of this 2004 mailing was to again assess the status of middle level education in Arkansas and to compare the results with the baseline established by the first survey. Where comparisons were possible, independent t tests were conducted on the data from both the 1990 and the 2004 surveys. From the independent t test results the researchers were able to determine if a statistical significant difference was present. Presented here is the statistical analysis on those questions which were able to be compared between the 1990 and the 2004 surveys.

TABLE 1A. Do you agree with the concept that early adolescents (10-15 years old) are unique in reference to other age groups emotionally, intellectually, physically, and socially?

Survey	Yes	No	Maybe
1990	94.15%	1.60%	4.26%
2004	98.59%	1.41%	not an option on this survey

An independent *t* test was conducted to determine if a statistically significant difference was present from the first survey in 1990 to the second administered in the spring of 2004 as shown in Table 1B.

TABLE 1B. Independent *t* Test for Concept of Early Adolescents

Survey	<i>M</i>	<i>SD</i>	<i>t</i>
1990	1.10	.4206	.503
2004	1.03	.1198	

The results of the independent *t* test reveal there is no significant difference between principals' perception from 1990 to 2004 regarding the unique characteristics of early adolescents. The observed *t* value is .503 which is not greater than *t* critical $(.05, 257)$ of 1.96.

TABLE 2A. Would you support the development of a middle level program in your current structure?

Survey	Yes	No	Not Applicable
1990	55.78%	17.08%	27.85%
2004	42.03%	2.90%	52.17%

An independent t test was conducted to determine if a statistically significant difference was present from the first survey in 1990 to the second administered in the spring of 2004 as shown in Table 2B. There was no significant difference when only the “yes” responses were considered. However, an adjusted comparison was made taking into consideration the “yes” response and the “not applicable” responses. The “not applicable” responses were those principals who had checked this category because they already had a middle level program in place. Therefore, the adjusted comparison was between those who already had a program in place and those who were supportive of putting a program into their current structure.

TABLE 2B. Independent t Test for Support of Development of Middle Level Program and Those Who Already had a Program in Place

Survey	M	SD	t
1990	1.73	.8717	2.62
2004	2.08	.9815	

The results of the independent t test show that there is a statistically significant difference in the support of a middle level program. The computed t of 2.62 was greater than t critical (.05,

221) which indicates that the difference between the 1990 and 2004 surveys can be attributed to more support of a middle level program.

TABLE 3A. Would or does your district office support making changes deemed appropriate for early adolescents?

Survey	Yes	No	Maybe
1990	48.68%	3.29%	48.03%
2004	94.03%	5.97%	not an option on this survey

To determine if a significant difference exists for district office support for making changes deemed appropriate for early adolescents, an independent t test was conducted to determine if a statistically significant difference was present from the first survey in 1990 to the second administered in the spring of 2004 as shown in Table 3B.

TABLE 3B. Independent t Test for District Office Support for Making Changes Appropriate for Adolescents

Survey	M	SD	t
1990	1.99	.9866	7.61
2004	1.06	.2307	

There is a statistically significance difference between the perception of district office support for making changes appropriate for adolescents. The computed t of 7.61 is greater than t critical $(.05, 217)$ which indicates the difference between the responses is not due to chance or other variables but to a definite change in perception by the those surveyed.

TABLE 4A. Membership in National Middle School Association

Survey	Yes	No
1990	26.03%	73.97%
2004	59.14%	40.85%

To determine if a statistically significant difference in professional membership in the National Middle School Association was present between 1990 and 2004, an independent t test was done. The data is presented in Table 4B.

TABLE 4B. Independent t Test for Membership in the National Middle School Association

Survey	M	SD	t
1990	1.74	.4288	4.26
2004	1.41	.4915	

The results of the independent t test indicate a statistically significant difference in membership between the two surveys given that t observed of 4.26 is greater than t critical (.05,142) of 1.96. One can conclude that membership in this organization has increased significantly in the past fourteen years.

TABLE 5A. Does your middle grades program use interdisciplinary team organization?

Survey	Yes	No
1990	33.78%	66.22%
2004	71.83%	28.17%

The following table (Table 5B) represents the results of an independent t test to determine if a statistically significant difference was present between the 1990 and 2004 data..

TABLE 5B. Independent t Test for the Use of Interdisciplinary Team Organization

Survey	M	SD	t
1990	1.66	.4762	4.92
2004	1.28	.4530	

A computed t of 4.92 is greater than t critical $_{(.05, 143)}$ of 1.96 which indicates a statistically significance difference between the use of interdisciplinary team organization from 1990 to 2004.

TABLE 6A. Does your middle level program(s) have an advisor/advisee program?

Survey	Yes	No
1990	31.51%	68.49%
2004	36.62%	63.38%

To determine a statistically significant difference in the use of advisor/advisee programs from 1990 to 2004, an independent t test was conducted. The results are shown in Table 6B.

TABLE 6B. Independent t Test for the Use of Advisor/Advisee Program

Survey	M	SD	t
1990	1.68	.4678	0.8809
2004	1.61	.4858	

The subsequent results of this independent t test do not indicate a significant difference in the use of advisor/advisee programs from 1990 to 2004. The computed t of .8809 is less than t critical $(.05, 142)$ of 1.96. The difference in the two surveys can be attributed to chance.

Survey	Yes	No
1990	27.14%	72.86%
2004	50.70%	49.30%

An independent *t* test was conducted to determine if there was a significant difference in flexible scheduling from 1990 to 2004. The results are shown in Table 7B.

Survey	<i>M</i>	<i>SD</i>	<i>t</i>
1990	1.73	.4479	2.74
2004	1.49	.5035	

As indicated by the results of the independent *t* test, there was a significant difference in the use of flexible scheduling from 1990 to 2004. The computed *t* of 2.74 was greater than *t* critical (_{.05, 139}) of 1.96, which indicates that the differences in the two surveys did not occur by chance.

Does your staff need training/in-service in middle level programs?

A little less than seventy percent of principals in 1990 indicated that their faculty needed training or in-service in middle level programs and almost seventy-nine percent of principals felt like their faculty would be willing to be trained.

An independent t test revealed the following) when comparing the answers to the above questions from 1990 to 2004.

TABLE 8. Independent t Test for the Need of Training/In-service

Survey	M	SD	t
1990	1.30	.4506	1.57
2004	1.20	.4007	

While principals felt their faculty would benefit from training in 1990 and 2004, there was no significant difference between the two groups in the fourteen-year time span. The computed t of 1.57 was less than t critical $(.05, 217)$ which does not indicate a significant difference in the responses.

Would your staff be willing to receive training in middle level programming?

By 2004, the percent of principals indicating that their faculty needed training was slightly over eighty percent and almost ninety-three percent felt that their faculties would be receptive to such training.

TABLE 9. Independent *t* Test for the Willingness of Faculty for Training

Survey	<i>M</i>	<i>SD</i>	<i>t</i>
1990	1.21	.4089	2.63
2004	1.07	.2577	

principals of the willingness of their respective faculties to receive training in the middle level philosophy. The computed *t* of 2.63 is greater than *t* critical _(.05, 207) of 1.96, which does indicate a statistically significant difference in the responses between the two groups.

TABLE 10A. Would your staff be interested in visiting an exemplary middle level program?

Survey	Yes	No
1990	80.00%	20.00%
2004	85.29%	14.71%

An independent t test was utilized to determine if a significant difference was apparent in the responses to this question from 1990 to 2004. The results are shown in Table 10B.

TABLE 10B. Independent t Test for Visiting an Exemplary Middle Level Program

Survey	M	SD	t
1990	1.20	.4014	2.94
2004	1.03	.3758	

These results indicate a statistically significant difference in the interest in visiting an exemplary middle level program from principals' responses from 1990 to 2004. It seems that more interest is present among today's principals when compared to the respondents answers in the 1990 survey. The computed t was 2.94 which is greater than t critical $(.05, 211)$ of 1.96, which does indicate a statistically significant difference between the two groups.

References

Alreck, P., and Settle, R. (1985). *The survey research handbook*. Illinois: Irwin Publishing Company.

Appendix

1990 and 2004 Middle Grades Survey Comparison Matrix

Item Compared	1990 Survey Item	2004 Survey Item
<i>Do you agree with the concept that early adolescents (10-15 years old) are unique in reference to other age groups emotionally, intellectually, physically, and socially?</i>	Item 1	Planning Opportunities, Item 2
<i>Would you support the development of a middle level program in your current structure?</i>	Section B, Item 1	Planning Opportunities, Item 1
<i>Would or does your district office support making changes deemed appropriate for early adolescents?</i>	Section B, Item 16	Planning Opportunities, Item 10
<i>How are the middle grades in your district organized?</i>	Section A, Item 5	District Organization, Item 2
<i>Membership in National Middle School Association</i>	Section A, Item 9	Middle Grades Program, Item 3
<i>Percent of Schools Utilizing Interdisciplinary Teams, Advisor/Advisee Program, and Flexible Scheduling</i>	Section A, Items 3, 4, and 6	Middle Grades Program, Item 1
<i>What do you perceive as the most difficult task in either designing, implementing, or improving a middle level education program?</i>	Section B, Item 11	Planning Opportunities, Item 11
<i>Other than money, what further assistance would you use to make your middle grades program more thorough and effective in all areas?</i>	Section B, Item 12	Planning Opportunities, Item 12
<i>Would your staff be willing to receive training in middle level programming?</i>	Section B, Item 13	Planning Opportunities, Item 5
<i>Would your staff be interested in visiting an exemplary middle level program?</i>	Section B, Item 15	Planning Opportunities, item 9

**MIDDLE GRADES SURVEY
PRINCIPALS/SUPERINTENDENTS
JON E. PEDERSEN SAMUEL TOTTEN
THE UNIVERSITY OF ARKANSAS
FAYETTEVILLE, AR 72701**

QUESTIONS FOR SURVEY FOR MIDDLE GRADES

1. DO YOU AGREE WITH THE CONCEPT THAT EARLY ADOLESCENTS (10-15 YRS) ARE UNIQUE IN REFERENCE TO OTHER AGE GROUPS EMOTIONALLY, MENTALLY, PHYSICALLY AND SOCIALLY?
YES _____ NO _____ MAYBE _____

2. DO YOU HAVE A MIDDLE LEVEL PROGRAM (OR SCHOOL) IN YOUR DISTRICT?
YES _____ NO _____ MAYBE _____

If YES complete SECTION A & B If NO complete SECTION B only

SECTION A

1. DOES YOUR MIDDLE LEVEL PROGRAM HVE ANY SPECIAL PROGRAMS (e.g. advisor/advisee, exploratory curriculum, etc.) THAT ARE SPECIFICALLY FOR YOUR MIDDLE LEVEL PROGRAM/
If so, please provide the name and focus of such programs:
2. How many middle level programs do you have in your district?
1 _____ 2 _____ 3 _____ 4 _____ 5 _____ or more _____
3. Does your middle level program have an advisor/advisee program?
Yes _____ No _____
4. Does your middle grades program use interdisciplinary team organization?
Yes _____ No _____
5. What combination of grades constitutes your middle level program?
5-6 _____ 5-7 _____ 5-8 _____ 6-7 _____ 6-8 _____ 6-9 _____ 7-9 _____ Other _____
6. Does your middle level program have "flexible scheduling?"
Yes _____ No _____
7. If yes, please succinctly describe how it works:
8. If you currently have a middle level program, what new programs are you currently working on implementing over the course of this school year?
9. Does your middle level program/school/district belong to the National Middle School Association?
Yes _____ No _____

SECTION B

1. As a superintendent/principal would you support the development of a middle level program within your present junior high structure?
Yes ___ No ___
2. As a superintendent/principal would you prefer a 6-8 organization pattern verses the traditional 7-9 concept?
Yes ___ No ___
3. If you do not have a middle program in your district, are there plans to develop one in the near future?
Yes ___ No ___
4. Would you be interested in receiving assistance in developing a middle level program?
Yes ___ No ___
5. Have you read the Carnegie Report: Turning Points?
Yes ___ No ___
6. If not, would you be interested in receiving a brochure of the report?
Yes ___ No ___
7. To what extent do you have heterogeneous grouping in your school? Please be specific in your answer.
8. Is your district currently part of a restructuring effort?
Yes ___ No ___
9. How many high schools do you have in your district?
Junior High ___ Middle School ___ Elementary School ___
10. What is/are the size(s) (enrollment) in your middle school(s)?
11. What do you perceive as the most difficult task in either designing/implementing/improving a middle level education program?
12. If there is any area in which you need assistance in either developing/implementing or improving your middle level education program, what is it?
13. Does your faculty need training/inservice in middle level programs?
14. Will your staff be willing to be trained/insericed in middle level programming?
15. Would you or your staff be interested in visiting an exemplary middle level program?
16. Would your district office support making changes deemed appropriate for early adolescents?

Public Schools of Arkansas: Survey of Middle Grades

The following questions are specific to the “middle school concept” and may need some clarification of terms. Any questions may be directed to Danny Barnett, Effective Strategies, Inc. at (501)281-0392 or dbarnet1@ipa.net.

District Organization

- Question 1: How many students are in your district? _____
- Question 2: How are the middle grades in your district organized?(i.e. 5-6, 5-8, 6-7, etc.)
_____ Number of students? _____
- Question 3: Does your district have a “middle school building”?
_____ YES _____ NO If YES, how many? _____
- Question 4: Has your district reorganized in the last ten years to an identified middle level grade organization? _____ YES _____ NO
Did you build a new building to house it? _____ YES _____ NO
If more than one, how many buildings? _____
- Question 5: Are there any plans to change the current middle grades organization in your district? _____ YES _____ NO
If YES, please describe: _____

If NO, please go to section on **Planning Opportunities**.
- Question 6: Is there a middle grades principal assigned to your middle grades organization(s)?
_____ YES _____ NO
If YES, do they have an assistant(s)? _____ YES _____ NO
How many? _____

Middle Grades Program

- Question 1: Which of the following middle level concepts are contained in your middle grades program?
- | | |
|--------------------------------|------------------------------|
| ___ Interdisciplinary teaming | ___ Adviser/Advisee program |
| ___ Team Common Planning Time | ___ Individual Planning Time |
| ___ Homogeneous Grouping | ___ Heterogeneous Grouping |
| ___ Athletics(interscholastic) | ___ Athletics(Intramural) |
| ___ Flexible Scheduling | ___ Exploratory Curriculum |
| ___ Integrated Curriculum | ___ Peer Tutoring |
| ___ Student Portfolios | ___ Peer Counseling |

Question 2: What type of scheduling do your middle grades use?
 six period day seven period day eight period day
 4x4 Block A-B Block Flexible Block*

*Please describe

Question 3: Is your school building represented by membership in any of the following organizations?

- National Middle School Association (NMSA)
- Arkansas Association of Middle Level Education (AAMLE)
- Arkansas Association of Middle Level Administrators (AAMLA)
- Arkansas Association of Elementary School Principals (AAESP)
- Arkansas Association of Secondary School Principals (AASSP)

Planning Opportunities

Question 1: Would you support the development of a middle level program in your current structure? YES NO Not applicable(have one already)

Question 2: Do you agree with the concept that early adolescents (10-15 years old) are unique in reference to other age groups emotionally, intellectually, physically, and socially? YES NO

Question 3: Academically, do you think any variation of a 5-6-7-8 organization pattern would best support and promote the current accountability standards?
 YES NO UNDECIDED

Question 4: Does your staff need training/in-service in middle level programs?
 YES NO

Question 5: Would your staff be willing to receive training in middle level programming?
 YES NO

Question 6: What areas of middle level training would your staff benefit the most from?

List 5 in order of preference(1 is highest) Refer to question 1-MGs

Program

1. _____
2. _____
3. _____
4. _____
5. _____

Question 7: What percentage of your staff has received training in and/or has studied middle level philosophy? _____

Question 8: How many teachers on your staff have received recent licensure specifically for middle level math/science or middle level language/social studies? _____

Question 9: Would you or your staff be interested in visiting an exemplary middle level program? _____ YES _____ NO

Question 10: Would or does your district office support making changes deemed appropriate for early adolescents? _____ YES _____ NO

Question 11: What do you perceive as the most difficult task in either designing, implementing, or improving a middle level education program?

Question 12: Other than money, what further assistance would you use to make your middle grades program more thorough and effective in all areas?

Please mail this completed survey to:

Dr. Greg Meeks
Arkansas State University
P.O. Box 2350
State University, Arkansas 72467