

# Students' Perceptions Of Microwave Distance Education At Ohio University

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## Abstract

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This article briefly summarizes a study of students' perceptions of the interpersonal communication courses offered to Ohio University's regional campuses via microwave during the summer of 1998. Seven communication courses that were designed for elementary and secondary teachers and education administrators as part of the coursework for an Interpersonal Communication Master's degree were evaluated. The study was conducted to contribute to the assessment of a grant obtained by Ohio University from the Ohio Board of Regents and to contribute to distance education research. The results from this study reveal a high percentage of student satisfaction ranging from 89% to 93% on the course materials, the technology, the instructors, and the impact of the courses.

## Methods

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The survey tool used in this quantitative study consisted of 28 Likert scaled items (Watt 118) and seven open-ended items. The Likert scaled items addressed four areas that were the dependent variables: the course materials, the technology environment, the teaching and learning environment, and the impact of the course. (See Table 1.) The independent variables for this study were gender, age, status (undergraduate or graduate), major, years of teaching experience, number of previously taken microwave courses, whether the students were onsite with the instructor, whether the students were onsite alone, the grades received, and the location of delivery. The demographics and respondent comparisons are available in Table 2. Of the total 186 students in the seven courses surveyed, 104 of the mailed surveys were returned—a response rate of 56%.

Data analysis was conducted using SPSS (Statistical Package for Social Sciences) software to produce descriptive statistics and to investigate for significant differences of means using a two-way analysis of variance (ANOVA). A significance level of .05 was employed for the ANOVA. Tukey HSD, a post hoc test, was used to locate where those significant differences existed for items with three factors. For items with dichotomous factors, a comparison of means was examined.

Students' responses to the seven open-ended questions provided additional information about the course materials, the technological environment, the teaching and learning environment, the impact of the course, the students' likes and dislikes concerning the courses, and any additional comments that the students wanted to contribute. Each response was coded positive, negative, or neutral.

## **Research Results**

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1. There were no significant differences of satisfaction for the course materials, technology, teaching or learning environment, and course impact based on gender and/or location.
2. The age group 45 through 58 was the most satisfied, while the age group 31 through 44 was the least satisfied with the technology, teaching or learning, and course impact.
3. Graduate students were more satisfied than undergraduate students in all four areas of focus: course materials, technology, the teaching or learning environment, and course impact.
4. Education majors were more satisfied than other majors with course materials, the teaching or learning environment, and course impact but less satisfied with the technology than were the other majors.
5. Those with 15 to 30 years of teaching experience were the most satisfied with course materials, technology, and the teaching or learning environment. Students with 6 to 14 years teaching experience were the most satisfied with the course impact, while students with 15 to 30 were the least satisfied with this aspect.
6. There were no significant differences of satisfaction for the course materials, technology, teaching or learning environment, and course impact based on the number of prior distance education courses taken.
7. Students who were alone onsite were more satisfied than were

students who were with others on all campuses except for Chillicothe.

8. There were no significant differences of satisfaction for the course materials, technology, teaching or learning environment, and course impact based on whether the students were onsite with the instructor.

9. There were significant differences of student satisfaction based on grades. The A group was more satisfied at Zanesville than was the B group. Zanesville did not report any responses for the C group. The B groups were most satisfied at Chillicothe and Lancaster—Athens, followed by the A group, and then the C group. At Southern, the highest satisfaction was reported by the C group, followed by the B group, and then the A group. However, since Southern had a small group ( $n = 10$ ) and only one student in the C group, these findings are suspect to a Type I error (Watt 230).

Tables and figures providing the ANOVA and Tukey HSD results reported above are available in *Students' Perception of the Interpersonal Communication Courses Offered Through Distance Education at Ohio University*. Citation information is provided in the works cited of this article.

Students' responses regarding course materials yielded an 89.3% satisfaction rate. The satisfaction rate for the microwave system as a learning environment was 92.0%. The highest satisfaction rate was for instructors' teaching methods at 93.0%. Overall, satisfaction with the courses and impact was 91.9%. The students' comments on the open-ended items supported the quantitative findings of the study.

## Conclusions

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While this was not a comparison study, it is worth noting that *Students' Perception of a Class Offered Through Distance Education*, a study conducted by Aytekin Isman in 1997, revealed that only 36.2% of the 210 students surveyed felt that they had learned as much as they would have in a traditional course. Of the 29 Likert scale items surveyed in that study, only 10 items revealed student satisfaction findings of over 50%. Two major differences between the 1997 Isman study and this one were the course content and the student ranking. The courses surveyed by Isman were nursing and business courses, while this study surveyed interpersonal communication courses. In the Isman study, only

10% were graduate students. Forty percent of the students in this study were graduate students, and they had higher satisfaction rates than did the undergraduates.

The following recommendations for future research could be explored at any institution offering distance education:

1. Further study of students' perception and grades for explanation of possible relationships could be conducted.
2. Investigation into instructors' perceptions could help explain why some courses are more successful or satisfying than others.
3. Research on course content could identify courses that may need more instructional consideration when offered via distance education.

While this study was limited to the regional campuses of Ohio University, the results support some of the distance education literature (Hanson, et al. 31) and are likely to be typical of distance education at other institutions. All institutions should be mindful of the need for assessment to enhance teaching and learning in all environments. Often some of the older technologies are neglected in this area as the newer technologies, such as the Internet and compressed video, gain popularity. Because compressed video has more similarities than differences with microwave for the uses of teaching, research such as this study can be applicable. Many institutions still employ the use of microwave as a viable source for instruction and should continue to evaluate various aspects of its use.

Table 1

## Survey Items Frequencies and Percentages

Item	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
	f P	f P	f P	f P	f P
The text complemented the classroom materials.	2 2.0	2 2.0	12 11.8	46 45.1	40 39.2
The quizzes were useful review and reinforcement devices.	1 1.6	3 4.8	7 11.1	39 61.9	13 20.6
The visuals were easily displayed on the TV screen.	1 1.0	4 3.8	4 3.8	47 45.2	48 46.2
The instructor used a variety of media (video, overheads, PowerPoint, etc.).	1 1.0	4 3.8	3 2.9	41 39.4	55 52.9
Printed class materials were received in a timely manner.		3 2.9	6 5.8	51 49.5	43 41.7
Printed class materials were of value.		1 1.0	8 7.8	57 55.3	37 35.9
Reserve library materials were available when needed.	6 9.8	6 9.8	13 21.3	27 44.3	9 14.8
Overall, I was satisfied with the course materials.	2 1.9	3 2.9	6 5.8	50 48.5	42 40.8
Adequate support was available for me to use the microwave system.		3 3.1	3 3.1	58 59.2	34 34.7
The presence of the cameras and microphones was intimidating.	41 39.4	35 33.7	11 10.6	14 13.5	3 2.9
The technology made learning difficult for me.	46 44.7	46 44.7	8 7.8	2 1.9	1 1.0
I found the course less interesting because it was televised.	48 46.2	40 38.5	7 6.7	6 5.8	3 2.9
The time I spent in this course was not as productive as in my non-televised courses.	35 35.0	48 48.0	12 12.0	3 3.0	2 2.0
Overall, the microwave system was an effective learning environment.	1 1.0	2 2.0	5 5.0	62 62.0	30 30.0

Note: f = frequencies

P = percentage

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## Survey Items Frequencies and Percentages (continued)

Item	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
	f P	f P	f P	f P	f P
The learning objectives identified important course content.		2 2.0	3 3.0	71 71.0	24 24.0
The instructor appeared knowledgeable about the subject matter.		2 2.0	2 2.0	34 34.0	62 62.0
The instructor was available for consultation.	1 1.0	4 4.1	3 3.1	41 41.8	49 50.0
The instructor encouraged discussion and/or interaction.	1 1.0	2 2.0		31 31.0	66 66.0
The classroom structure helped me get to know the other students.		7 7.1	8 8.1	51 51.5	33 33.3
Class discussions were valuable.		4 4.0	4 4.0	52 52.0	40 40.0
Overall, the instructor's teaching methods were effective.	2 2.0	3 3.0	2 2.0	47 47.0	46 46.0
The course material is useful in the classroom or office.		1 1.0	4 4.0	59 59.0	36 36.0
The course material helps me in my personal life.	2 2.0	5 5.0	16 16.0	52 52.0	25 25.0
I would consider taking another course via microwave.	1 1.0		6 6.0	44 44.0	49 49.0
The course content was appropriate for delivery via microwave.	2 2.0	2 2.0	4 4.0	62 62.0	30 30.0
I would have driven to another campus to take this course.	22 22.4	23 23.5	28 28.6	18 18.4	7 7.1
Overall, I was satisfied with this course.		2 2.0	6 6.1	57 57.6	34 34.3

Note: f = frequencies                      P = percentage

Source: Students' Perceptions of the Interpersonal Communication Courses Offered Through Distance Education at Ohio University (Ann Arbor: UMI, 1999) 170-171.

Table 2

Demographics and Respondent Comparison

Demographics	Number	Respondents %
<b>Gender</b>		
Male	19	18.4
Female	84	81.6
<b>Age</b>		
20 – 30	29	28.7
31 – 44	32	31.7
45 – 58	40	39.6
<b>Status</b>		
Undergraduate	62	59.6
Graduate	42	40.4
<b>Major</b>		
Education	42	40.4
Communications & Others	62	59.6
<b>Years of Teaching</b>		
0 – 5	24	30.8
6 – 14	27	34.6
15 – 30	27	34.6
<b>Number of Microwave Classes Taken</b>		
None	57	56.4
One or more	44	43.6
<b>On Site with Instructor</b>		
No	72	79.1
Yes	19	20.9
<b>Only Student on Site</b>		
No	81	78.6
Yes	22	21.4
<b>Grade Received</b>		
A	43	46.2
B	47	50.5
C	3	3.2
<b>Location</b>		
Chillicothe	18	18.4
Lancaster/Athens	37	37.8
Southern	10	10.2
Zanesville	33	33.7

## Works Cited

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- Crawford, Mikiko Ward. *Students' Perception of the Interpersonal Communication Courses Offered Through Distance Education at Ohio University*. (Doctoral dissertation, Ohio University, 1999) Athens: UMI, 1999. 9929303.
- Hanson, Dan, et al. *Distance Education: Review of the Literature, 2<sup>nd</sup> Edition*. Washington, DC: Association for Educational Communication and Technology, 1996.
- Instructional Technology Steering Group of Ohio University. *Enhancing Learning Through Technology: A Blueprint for Innovative Change*. Mar. 1997 Ohio University Sep 2000. <<http://www.ohiou.edu/apit/grant/index.htm#abs>>.
- Isman, Aytakin. *Students' Perception of a Class Offered Through Distance Education*. (Doctoral dissertation, Ohio University, 1997) Athens, Ohio.
- Watt, James H., and Sjeff A. Van DenBerg. *Research Methods for Communication Science*. Boston: Allyn and Bacon, 1995.

## Biography

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