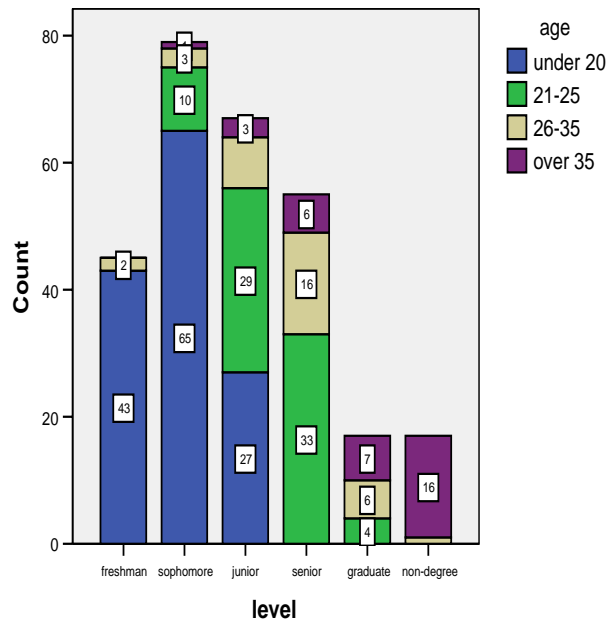


**Teaching Millenials and Older Students in Online Learning Environments**  
**Paula Garcia, Northern Arizona University**  
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**Overall demographics of participants**

Age group				Gender	
Under 20 (Group 1)	21-25 (Group 2)	26-35 (Group 3)	36 and over (Group 4)	Female	Male
N=135	N=76	N=36	N=33	N=135	N=146

**Student Age by Academic Level**



**Abstract**

Millenials, Electronic Natives, the Net Generation. Whatever name is used to describe the new generation of new college students, it is clear that they are distinctly different from the previous generations. This new generation is highly technologically capable and open to the types of teaching practices often used in web-enhanced learning, such as working in groups (Howe& Strauss, 2003). In online learning environments where technical abilities and independent learning come into play, the differences between younger students and older students take on special implications for teaching.

**Research questions:**

1. Are Millenials (25 years old and younger) different from older students in perceived technical ability?
2. Are Millenials different from older students in attitudes about online versus traditional teaching methodologies?
3. Are Millenials different from older students in attitudes about who is responsible for different learning/teaching activities?

## Results A: Technological Ability

Question: Which statement best describes your comfort level in doing the activities listed below? By “comfort level” we mean how proficient you feel you are at doing the activity independently.

- 1: I am not familiar with this or have never done it
- 2: I have done this but do not feel comfortable with it
- 3: I feel fairly comfortable doing this
- 4: I feel very comfortable doing this.

Questions	F	Post Hoc
T1: Participating in an online asynchronous discussion (bulletin board)	*4.03	Group 4 < Groups 1, 3
T2: Participating in an online synchronous discussion (chat)	*10.00	4 < 1, 2, 3
T3: Uploading a webpage to a server	*3.16	4 < 2
T4: Creating a presentation using PowerPoint or a software program like it	*4.56	4 < 1,2
T5a: Inserting graphics, tables, or charts into a word processing document	*3.42	4 < 2
T5b: Inserting graphics, tables, or charts into a webpage	*3.21	4 < 2
T5c: Inserting graphics, tables, or charts into a PowerPoint presentation	*3.34	4 < 2
T6a: Using an electronic spreadsheet such as Excel to organize and analyze data	*3.73	4 < 2
T6b: Using an electronic spreadsheet such as Excel to perform mathematical calculations	*4.44	4 < 2
T7: Navigating a website or course that is online	*5.18	4 < 1,2,3
T8a: Looking up professors’ or fellow students’ email address using the NAU online directory	*9.58	4 < 1, 2
T8b: Logging on to an NAU computer to find my personal documents and settings	*12.96	4 < 1,2,3
T9: How confident do you feel with learning new tools and techniques on your own?	*2.58	4 < 2

\*p < .05

### Interpretation of Findings

- Older students (36+) are less comfortable with technological learning tools such as online discussions, course navigation, and presentation software.
- Students aged 21 – 25 have the highest level of comfort with technological learning tools, particularly advanced tools such as webpage creation and spreadsheets.
- Older students are less comfortable with computer networks and are more accustomed to being isolated computer users rather than linked to a network of users.

## Results B: Learning Preferences

Question: To what extent do you agree with the following statements?

- 1: I strongly disagree
- 2: I disagree somewhat
- 3: I agree somewhat
- 4: I strongly agree

Definition of Groups	
Group 1	Under 20
Group 2	21 - 25
Group 3	26 - 35
Group 4	36 and over

Questions	F	Post Hoc
P1: Learning university-level course content is effectively done through discussions with the instructor	*2.69	Group 2 < Group 1
P2: Online course require less time than face-to-face (in-class) courses	*5.040	4 < 1,2
P3: Online course require students to do all course-related activities (such as reading, writing papers, etc) online	*7.92	4 < 1,2,3
P4: Doing class projects in groups with other students means less work for individual students	*3.226	4 < 1,2

\*p < .05

### No significant differences were found among groups regarding the following items:

Learning university-level course content is effectively done through lectures.

Learning university-level course content is effectively done through reading

Learning university-level course content is effectively done through discussions with other students (peers)

### Interpretation of Findings

- Students of all ages maintain traditional ideas about effectiveness of learning through lectures and reading.
- Older students expect to do more activities off-line than younger students.
- Younger students see group projects as less demanding than individual work.

### Results C: Responsibility of Learners

Question: In a university-level course, who is responsible for the following?

1. Instructor only
2. Instructor and students, but mostly instructor
3. Instructor and student, but mostly student
4. Student only

Definition of Groups	
Group 1	Under 20
Group 2	21 - 25
Group 3	26 - 35
Group 4	36 and over

Significant Differences in Means (Paired-Samples t-test, adjusted alpha level = .02)

Variable	Whole Group Mean	Significant Differences ( $p < .02$ )
R6: Evaluating course effectiveness, for example: the quality of the course materials	2.45	<b>All variables significantly different from all other variables</b>
R7: Evaluating student learning, for example: how well students learned important concepts	2.07	
R5: Finding gaps in student learning	1.99	
R2: Moderating/leading discussions	1.88	
R4: Preparing questions about course content and material	1.80	
R1: Presenting course content	1.57	
R3: Coming up with course assignments	1.26	

Note: No significant differences were found among age groups in any of the variables. All differences were between whole group means.

#### Interpretation of Findings

- Students of all ages generally agree on the distribution of responsibility of course activities.
- Students see coming up with course assignments, presenting content, preparing question, and leading discussions mainly as the responsibility of the instructor.
- Students see evaluative activities as the responsibility of the student more than of the instructor.

## Overall Implications

Overall Interpretation	Implication for Teaching
There are differences in perceived technological ability between older students and younger students.	Older students may need more time and clear, explicit instructions when asked to perform tasks outside of their comfort zone, including being guided through course navigation or participating in a networked environment.
Younger students may see online learning environments as “shortcuts to learning.”	Course assignments should be plentiful and rigorous with clearly articulated expectations and transparent links to learning objectives.
All students maintain traditional ideas about effective teaching and learning.	Students need explanation of and exposure to more non-traditional, student-centered techniques so that they can thrive in online learning environments
Students feel that it is their responsibility to evaluate a course, but not their responsibility to take part in course planning.	In order to foster self-regulation and independence in students, courses should be designed to give learners more responsibility for developing discussion activities, presenting content, creating learning activities, etc.