International Journal of Teaching and Learning in Higher Education 2007, Volume 19, Number 1, 53-63
http://www.isetl.org/ijtlhe/ ISSN 1812-9129

Games as an Interactive Classroom Technique: Perceptions of Corporate Trainers, College Instructors and Students

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This two-part study investigates perceptions of interactive classroom teaching techniques for adult learning. In the first part of the study 62 college faculty members and 45 corporate trainers were surveyed about their teaching and training methods. The survey had two main objectives: to determine rates of classroom techniques used, and to determine influences on teaching styles. Trainers used a greater variety of teaching techniques in their presentations, such as visuals and interactive exercises including games, and spent less time on lecturing than their college faculty counterparts. Both groups identified their temperament as the main influence on their teaching style. Several other influences on teaching style were cited with similar frequency by the two groups, but trainers reported using mentors and instructors' guides more frequently than college instructors did. In the second part of the study, five faculty members were mentored to change traditional lectures to interactive games. A review of their perceptions of success and difficulty in using such activities in the college classroom, their students' perceptions of the exercise, and student performance identified both benefits and costs. Suggestions are made for strategies to successfully implement games in the college classroom, based on consideration of these benefits and costs and the survey results.

Student motivation and engagement are an ongoing challenge for classroom instructors and the basis of various research endeavors (Glynn et al., 2005). A substantial body of literature indicates that the use of non-traditional interventions, such as games, simulations, multimedia instruction and interactive activities are valuable teaching methods. For example, reporting on a study on student motivation and learning, Nemerow (1996) concludes that, "Although playing games in the classroom does not solve all of the problems with education, it can be a useful tool, one of many different methods and techniques used to involve students with their learning"(p. 365).

The arguments for using active learning in the classroom are clear. First, for the past century, it has been known that there is an optimal level of arousal for peak performance (see Yerkes & Dodson, 1908). The learner passively sitting in a lecture, with no stake or interest in the information, does not reach the level of stimulation required to promote effort. Moving around a room, participating in a contest, or simply talking to other students can raise the level of activity to a point where a student is more alert and attentive to the activities of the class. Active learning techniques divide the lecture so that less material falls prey to the serial position effect—dips in learning of material in the middle of a lecture (Johnston & Calhoun, 1969).

Using activities and games in class encourages active learning, as well as collaboration, and interactivity (Reuben, 1999). Participation in an activity requires the use of content by the learner; thus ensuring students are working with the ideas that are being taught, and applying them. In lecture situations, students are assumed to be doing this on their own. Proponents of adult learning theory assert that students must be actively involved in their learning, that they must get feedback, and that they should practice sharing, reflecting, and generalizing in small group activities (Speck, 1996). For these reasons, several studies focus on the recall and performance benefits from active learning strategies (Angelo & Cross, 1993; Bonwell, 1996; Butler, Phillmann, & Smart 2001; Peterson, Swing, Braverman, & Buss, 1982; Pintrich & deGroot, 1990).

Few studies have actually measured the impact of games on student learning, but one large study by Hake (1998) examined student performance with interactive engagement and traditional lecture methods in introductory physics courses. He compared 48 classes teaching introductory physics using interactive engagement with 14 classes using traditional lecture methods. Courses classified as having interactive engagement formats contained hands-on activities with discussions involving peers and teachers. Traditional courses had a passive lecture format. In a pre- and post-test comparison of conceptual knowledge, considerably larger gains in conceptual knowledge were reported for the interactive courses, regardless of whether the course was at high school, college, or university level. Furthermore, in some of the interactive engagement format classes students demonstrated more advanced problem solving. Although causality cannot be completely isolated in this nonequivalent groups design, the large number of students examined, over 6,500, and the consistency of the positive effect of engagement, present a persuasive argument that resonates with the theoretical rationale for using activities in the classroom.

In addition to memory and performance benefits, games and interactive learning methods have important

social benefits for students. These activities allow students to practice using the vocabulary of the discipline, which social constructivists purport to be central to learning (Kelly & Green, 1998; Vygotsky**,** 1962). Feedback from other students can show that participating with the material in the field is acceptable, and also provides positive reinforcement for working with others to accomplish the goal of the activity. Also, stronger students model the ways that they work with the material for students with less developed study habits. The in-class activities can persuade students to rely on each other more as they study outside of class. Such a context for learning supports the development of social competence (Huyen & Nga, 2003; Nemerow, 1996; Schwartzman, 1997). Games provide structure for interactions, reward students for collaborating and problem solving (Schwartzman, 1997), and promote cooperative learning, "individual accountability, positive interdependence, and the need for group processing and feedback," (Millis & Cottell, 1998, p.149). Whereas students' self-chosen social groups are often homogenous, with members of similar backgrounds and interests, the classroom can provide an opportunity to practice working and learning in heterogeneous teams. In addition to promoting diverse interactions among students, games provide a way to reach and engage students who may have a variety of learning styles. Individual investigations of learning styles support this perception (Franklin, Peat, & Lewis, 2003).

The memory, performance and social benefits of interactive learning techniques contribute to a fourth rationale for including games and simulations in the classroom—improved transfer of learning. Instructors assume that students will use what they learn in other contexts, but this assumption may be false (see Barnett & Ceci, 2002). Students need to have learned the material and be supported in the social norms of applying it, but for students to transfer what they learn, they also need to practice the skill of abstracting what they know and applying it (Alexander & Murphy, 1999). Students often have particular difficulty in far transfer tasks, where they have to use information in a context very different from the learning environment. Games promote transfer because they require student participation and active involvement with the material within a rich context (Cruickshank & Telfer, 2001). Creating opportunities for students to practice applying the material, such as in a game or simulation, can bridge the distance between learning concepts presented in a classroom and using that information to solve a problem met outside of the school.

These rationales, which support the use of games and other active learning techniques in the classroom, have a long history (see Cruikshank & Telfer, 2001 for a review). Despite this, they may be underused in college classrooms where the lecture continues to be the norm (Bok, 2005). Wright, Betteridge and Buckby (1984) comment, "If it is accepted that games can provide intense and meaningful practice of language, then they must be regarded as *central* to a teacher's repertoire. They are thus not for use solely on wet days and at the end of term!" (p.1). Acceptance of games as a learning tool, rather than as a time filler, is essential if their full potential is to be realized. A survey of current business simulation game users, former users and never users among business faculty across disciplines concludes that the number of never users (52.3%) is higher than that of the current users and former users combined (Faria & Wellington, 2004). This is surprising, given the long history of the use of games as an instructional tool in the discipline of business. Despite the potential benefits for memory, performance, social competence, and transfer of learning, the use of games and other experience-based activities continues to provoke debate.

Corporate Training Trends

Corporate training highlights the learning potential of games and advocates using such non-conventional approaches consistently as a training tool. For example, Edward Scannell, a professional development author effectively captures the appeal of games as an instructional tool in corporate training, "People are not content to be 'talked at'. They want to take an active role in their own learning. Games get people involved and clearly enhances their learning," ("Are Training Games a Waste of Time?" 1996, p. 26). Wenzler and Cartier (1999) make an effective case for the use of games in organizational learning by asserting that "Games and simulations help organizations develop symbolic thinking and gestalt understanding; help them create memories of the future; enable shared experiences and the building of shared intelligence; and, possibly most important, develop their members' motivation and confidence to act," (p. 375). A number of books and manuals (e.g., Pike & Busse, 1995; Stolovich & Keeps, 2002; Thiagarajan, 2003) advocate this kind of learner or trainee involvement

In corporate training, active learning with plenty of student involvement is the norm, and games and fun are even viewed as prerequisites for learning. For example, one training consultant asserts "Learning is directly proportional to the amount of fun you have," (Pike & Busse, 1995, p. V). In opposition to this attitude, Gaudart (1999) states that some college instructors, especially those instructed in teacher-centered classrooms, have a different assumption, "Many [teachers] still feel that if learners are laughing and having fun, they could not be learning very much," (p. 289). If these views are representative of trainers and

professors, then these opposing attitudes may predetermine some of their pedagogical choices and strategies.

Our experiences suggest that the corporate training model of active learning is quite different from the instructional practices of college professors. Teaching and learning conferences present many active learning innovations, and the field of scholarship of teaching and learning embraces the concept of active learning. However, a focus on active learning is still not standard practice in many college classrooms (Bok, 2005) and the movement away from traditional liberal education toward corporate practice brings concern to many (e.g., Lomas, 1997).

The goals of college instruction and corporate training differ in some ways: building knowledge versus skill, assessing learning versus job return on investment, and creating better citizens versus better employees. Nonetheless, the main goals of trainers and college instructors overlap: creating lifelong learners, changing behaviors, and creating learning that can be applied beyond the immediate classroom. By ignoring the move toward active learning, academia misses an opportunity to increase student learning and our students are less prepared for this kind of learning when they encounter it later in their careers. Shared lessons from academia and corporate training could form a base of research that investigates if, how, and under what conditions, active learning techniques enhance student learning. This study is a first step in this direction.

In an attempt to better understand the differences between the corporate training classroom and the college classroom, this study compares the classroom techniques of college instructors and corporate trainers and assesses the effectiveness of games as an active learning classroom technique to engage learners. We surveyed members of both groups about their instructional style, the factors influencing their style and the amount of time spent lecturing. In a second part of the study, five college professors volunteered to replace a section of traditional lecture with an interactive classroom exercise. Their experiences, and their students' reactions, inform discussion on the benefits and the limitations of the active learning approach.

Method

Participants

For the survey study, 62 instructors from a 2-year regional campus of a state college/university participated along with a convenience sample of 45 corporate trainers from companies both big and small, including an airline, a paper company, and an HR consulting organization. Additionally, five college faculty members from different disciplines (Math, Psychology, English, Arts & Visual Communication, and Nursing) volunteered to replace a section of lecture in their classrooms with a new interactive game. Afterwards, the five instructors and their students (n = 68) offered their perceptions of the new technique.

Survey Study

The 10-minute questionnaire was completed anonymously for no compensation (See Appendix). Participants, college instructors and corporate trainers, were asked to:

- Check the frequency with which they use a variety of classroom methods on a Likert Scale ranging from 1 (*Never*) to 5 (*Always*). The methods included visual presentation stimuli, activities (e.g., PowerPoint, CDs, Films), group activities (e.g., mock debates, case studies, role play, peer review, games), or other techniques (e.g., props, music, guest speakers, field trips, flip charting responses).
- Estimate the proportion of a typical class that they spent speaking and lecturing.
- Rate the impact of a variety of factors on their classroom skills, including: temperament/ personality, instructor models, formal training, workshops, peers, mentoring, and trial and error.
- Describe an innovative technique that they use in the classroom
- Indicate their years of experience in training or teaching.

Trainer and professor responses to the survey were compared using analysis of variance (one-way ANOVA).

Introducing a New Game

Five faculty members volunteered to work with the researchers to develop new games that would replace traditional lectures in their courses. The games involved activities such as group crossword puzzles, word scrambles, and team concept matches. After conducting the game and assessing student learning, faculty completed interviews on their experiences. These interviews were 20 to 30 minutes long and consisted of a standard set of questions including:

- **"**Describe previous active learning techniques that you've used."
- "How did the game impact your classroom?" (With prompts for interaction, performance, engagement, and retention.)

- **"**How did you feel about using games in your class?"
- "Compare the workload to that of a traditional lecture?"
- "What do you see as the pros and cons of using games in the classroom?"

Using an anonymous survey, students of participating faculty were asked if they learned anything, if the game was a waste of time, if the game accomplished its objectives, if the students enjoyed the game, and if students wished more faculty used games like this one. Students also estimated the proportion of time that they would prefer to have allocated to lectures and group activities or other in-class activities. Open-ended items asked about their preferences for group activities and games in class.

Results

Classroom Technique Usage

Corporate trainers reported using multimodal techniques and active learning strategies more frequently than the college professors surveyed (see Table 1). There were significant differences between the two groups in ratings of PowerPoint usage (F[1,106] = 9.49, p = .003), other visual aids (F[1,103] = 8.28, p = .005), CD-ROMs or electronic media (F[1,106] = 7.27, p = .008), ice breakers (F[1,105] = 17.08, p = .00), group work (F[1,106] = 7.27, p = .008), flip charting responses (F(1, 106) = 80.7, p = .00, the use of games (F[1,105] = 15.27, p = .00), the use of props (F[1,103] = 12.21, p = .001), and role play, F(1,106) = 20.34, p = .00.

There was also a difference in the amount of class time that each group reported lecturing or speaking, with corporate trainers lecturing significantly less (M = 56.44%, SD = 26.04) than professors (M = 67.10%, SD = 22.53), F(1,103)= 5.03, p = .03.

Factors Affecting Classroom Skills

Table 2 lists the average rating of college instructors and corporate trainers for the factors affecting their classroom skills. Both groups reported that the most influential factor in their teaching is their temperament or personality. For trainers, the next two influences were mentoring and the use of instructors' manuals, both of which differed significantly from instructors' ratings, (F[1,96] = 31.18, p = .00 and F[1,97] = 87.69, p = .00) respectively. Trainers relied more on mentors than college instructors did. Trainers were also more influenced by instructors' manuals than were college instructors. Both groups reported relying on trial and error, workshops, formal training, peers, and student evaluations in similar ways.

TABLE 1
Frequency of Use of Classroom Activities by Trainers and Professors

	Trainers (n = 45)		Professors (n = 62)	
Technique	M	SD	M	SD
PowerPoint visuals*	3.70	0.94	2.87	1.62
Other visual aids*	4.00	0.81	3.41	1.74
Films or videos	3.05	0.65	2.82	1.14
CD-ROMs/electronic media*	2.89	0.92	2.31	1.24
Ice breakers*	3.87	1.02	2.95	1.22
Group work*	3.90	0.94	3.32	1.21
Mock debates	1.84	0.95	1.76	1.10
Case studies	3.09	1.07	3.05	1.21
Flip charting responses*	3.78	1.09	1.85	1.10
Games*	3.20	0.83	2.44	1.09
Props*	3.31	0.95	2.50	1.32
Student peer reviews	2.56	1.04	2.12	1.33
Music*	2.18	0.91	1.54	0.83
Role play*	2.00	1.07	2.96	1.12
Guest speakers	2.52	1.01	2.24	0.99
Field Trips	2.13	0.87	1.79	1.07
Demonstrations	3.40	0.94	2.98	1.23

Note. One-way ANOVAs employed the Bonferroni adjustment for multiple comparisons to reduce the likelihood of a Type I error. For all means, 1 = never to 5 = always.
*p < .05.

TABLE 2
Rating of Impact of Factors on Classroom Skills by Trainers and Professors*

	Trainers (n = 45)		Professors (n = 62)	
	M	*SD*	*M*	*SD*
Own temperament/personality	4.32	0.56	4.29	0.70
Own effective profs/trainers	4.02	0.67	3.84	0.90
Formal training on classroom skills	3.41	0.92	3.09	1.25
Workshops/Seminars	3.36	0.89	3.24	0.98
Professional conferences	3.10	1.03	3.12	1.10
Observing your peers	3.39	0.95	3.16	0.93
Mentoring *	4.18	0.58	2.98	1.33
Trial and error of techniques over time	3.98	0.94	4.03	0.96
Facilitator's guides and manuals	4.09	0.87	2.21	1.07
Trainee (student) evaluations	3.33	0.92	3.32	0.83

Note. One-way ANOVAs included Bonferroni adjustments for familywise error. For all means, 1 = no impact to 5 = very much impact.
* $p < .05$.

Responding faculty members were in their jobs significantly longer (M = 14.03, SD = 9.85) than the corporate trainers (M = 9.20, SD = 6.29), F(1,98) = 7.90, p = .01.

Student Perceptions of Games in the Classroom

The students (n = 68) of the five instructors who used an interactive game to replace a lecture rated the experience as generally positive. Students rated the game on 1(low rating) to 5 (high rating) Likert scales for how much they learned (M = 3.71, SD = .74), whether it was a waste of time (M = 2.0, SD = .91), whether the game accomplished its goal (M = 3.93, SD = .76), their enjoyment of the game (M = 3.95, SD = .86), and whether they wished other instructors would include similar activities (M = 3.75, SD = .92).

Students said that their preference for time allocation in class was on average, 51.48% (SD = 20.66) lecture, 38.96% (SD = 21.35) group activities and 11.63% (SD = 11.66) for other activities which were most often films, field trips guest lectures and time to work or meet with the instructor.

Their comments were more mixed than the numerical ratings, including, "Games and activities are silly and degrading. As a college student, I found it childish." and "You can't always rely on your peers to know things you'll need for the activities." Other comments emphasized the need for variety, that lecture can be boring and redundant with the book, and that activities appeal to different learning styles, e.g., "I am a very visual and hands-on learner, so I learn more when we do group activities or when the lecture involves visual aids."

Faculty Comments on Using New Interactive Exercises

The five faculty members who replaced a section of lecture with a game reported that the biggest hurdle was finding the time to create the game the first time, "It takes more time than to lecture over things you already know." However, the writing instructor reported that, "the use of games is not necessarily more work [than using lecture]." They reported some concern about student resistance.

> Math students are used to working problems, going over ideas, and there's a certain math mindset. There's instructor and student resistance when they are expected to run it certain ways. I have ideas and think 'they'll riot on me if I try that.' If I step out of the box, I don't know how they would react.

The instructors expressed concern that the students would resist active participation and feel that the faculty members were shirking their duty. In addition, they were apprehensive about how to deal with under-prepared students and class management. However, these concerns were balanced by positive reactions such as, "The application that games offer of information learned helps in better retention," and "The game was worth the time." All participating faculty reported an increase in student engagement and interaction as a result of the inclusion of a game in the classroom.

Discussion

This study illustrated some striking differences between workplace training classroom activities and

learning in the college classroom. The use of visuals, other multimedia techniques, props, music is more common in workplace settings. Trainers use more active learning strategies than do college professors, including group work, role play or games. Both groups indicated that personality was the biggest determinant of their teaching, followed by mentors for trainers and trial and error for professors. Mentoring and instructors' manuals influenced trainers more than faculty members.

Students responded positively to the new active learning exercises that replaced traditional lecture in five classes, indicating that they learned a lot, it was not a waste of their time, that the activity was enjoyable, accomplished its goal, and they wished more faculty members used such activities.

When students were asked the amount of time they would prefer to have in the traditional lecture format, their average response was 51%. Interestingly, their responses were closer to the amount of time trainers actually lecture (56%) than that of professors, who spend 67% of class time lecturing. One of our faculty interviewees expressed hesitation at incorporating active learning strategies and games, worrying that students are expecting to be taught or told and should "get their money's worth." However, in the survey, the students expressed a preference for less time spent lecturing than instructors report lecturing, so these instructors' concerns may have been unwarranted.

Future studies are needed to fully explore the impact of active learning on student learning. One difficulty in this type of study is employing appropriate control groups, because once instructors start to implement this type of strategy in classes, they are often reluctant to present one section with a regular lecture. Obtaining this comparison data is crucial to demonstrating the value of this pedagogical approach in order to persuade faculty members who are firmly entrenched in the talk-and-chalk tradition that the initial effort of developing games or other active learning strategies has payoffs in student learning.

Even within the business classrooms, where gaming and simulation are commonly used (Reuben, 1999), assessment is challenging, for example Keys (1977) reviewed twelve studies that examined learning outcomes comparing traditional classrooms to gaming or simulation exercises. Although gaming had more positive results than traditional courses, the results were somewhat inconsistent. They varied with the type of measure used, whether the outcome was a multiple choice, essay or case study, and the quantity of instructor participation. These factors all affected the results. More recently, Gosen and Washbush (2004) evaluated 39 studies in which simulations and experiential learning were assessed. They state that early advocacy of simulations relied on performance within the activity, not necessarily learning. Based on their criteria, only three of the studies reviewed had sound research designs, used measures of learning rather than affect, tied outcomes to learning goals, and used validated outcome measures. This led to their conclusion that, "We can probably say that there is evidence that these approaches [simulations and experiential learning] are effective, but the studies showing these results do not meet the highest of research design and measurement standards. Thus, we believe any conclusion about them must be tentative," (p. 284). Even so, much literature examines gaming and simulation in the business classroom with generally positive results, for example a large study with over 2,000 participants, showed that gaming is valid as its results mimic some of the main principles in the field (Faria & Wellington, 2005). Nonetheless, challenges in study design may deter some instructors from using alternate methods, if lecture is their discipline's primary approach.

It may be that it is not persuasion and effort that could bring a traditional lecturer to use active learning. Disciplines have specific norms for the amount of active learning expected. This is demonstrated at interdisciplinary conferences in which some attendees are appalled that others just read papers, and others feel it is silly to participate in activities. In this study, both trainers and college instructors reported that their own temperaments and personality were the main factors influencing their classroom methods. If personality predicts classroom methods, and if facilitating active learning involves an entirely different skill set than lecturing, then more time and energy should go into selecting faculty into teaching careers who are learner-focused and embrace effective alternate methods. Indeed content knowledge is just one factor in hiring corporate trainers, but it may be the main determinant of obtaining a job in college settings. Future studies should examine the root of hesitancies toward teaching with active methods further, to determine whether such hesitancies are driven by personal style, lack of exposure to the methods, insufficient ability with the methods, or discipline-specific norms.

In addition to individual styles, resources may affect the technique usage rates in important ways. Corporate trainers may have skilled instructional designers providing well-developed activities, while college instructors, in the midst of a number of responsibilities, do not have time for development without assistance. Trainers may have access to other resources, which would contribute to the variety of modalities more frequently used, for example, classroom computer equipment, models and materials, whereas instructors may have a limited budget for innovative tools in the classroom. Lean and colleagues (2007) investigated perceived barriers to simulation

usage. Their surveys of staff perceptions revealed that overall, staff rated lack of resources, including course development time and support, to be the strongest barriers to using simulations. However, when comparing simulation users to non-users, beliefs about the suitability of the method are dominant. So, perceived challenges might not always relate to the factors that actually encourage or discourage technique usage. More research is needed to further investigate why some faculty do not use games and other active learning techniques in the classroom.

Student attitudes, and individual differences between students, also need exploration. In assessing students' preferences for lecture-time, group time or other uses of time in the classroom, ratings showed very large standard deviations, indicating that there was a wide range of preferences with many strong preferences for one or the other. Some studies suggest that the relationship between teaching style and adult learning is a function of the type of course (Conti, 1985). Therefore, research is needed to clarify which students benefit most from active learning and how to design activities to overcome some students' hesitations.

Faculty and student comments indicated that the actual design and implementation of the games in the classroom also influenced the way games were perceived by students in the classroom. Factors such as establishing clear objectives and goals, and matching the difficulty level of the game to the ability level of the students emerged as important considerations. The purpose of the game needs to be well defined and should provide appropriate challenge. The way a game is presented is often responsible for its eventual success. The delivery of clear instructions to avoid misunderstandings is crucial, as one of the participating faculty of our study affirmed during the interview. Debriefing, or the evaluation of results and events that actually take place in the game, is crucial to its success, and may be more important to concept understanding than the activity itself (Garris et al., 2002; Salies, 2002).

The role of the facilitator or game leader cannot be underestimated. Faculty participants of our study acknowledged the importance of creating teams or groups that are well balanced with ability. Matching the game to the ability level of the students in the context of established goals creates challenge and motivates the students to persist. Another important role for facilitators is that of managing expectations and presenting the advantages and disadvantages of games and active learning (Christopher, 1999). Without attending to these aspects of a classroom game, the learning may become secondary to the novelty and enjoyment.

The corporate model may be at odds with liberal education in many ways (see Lomas, 1997; Moser & Seaman, 1987). However, both corporate trainers and college professors are invested in providing rich educational experiences and providing learning that transfers beyond the classroom. This study showed that corporate trainers reported employing active learning techniques to meet these goals more frequently than faculty did. Furthermore, the faculty who created new games to replace lectures in their classrooms, and their students, responded favorably. This suggests that faculty should increase the classroom time spent on interactive pedagogy, in order to prepare our students for the type of learning that they will encounter later in their professional lives.

Ultimately both groups, corporate trainers and college instructors, care about adult learners. Therefore, attention to research and trends within *both* the field of corporate and academic instruction may reveal valuable insights for improving learning.

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Authors Note

This project was completed through participation in the Ohio Teaching Enhancement Program sponsored by the Learning and Teaching Center at Raymond Walters College, University of Cincinnati. Special thanks to co-directors of the Center, Drs. Ruth Benander and Beverly Knauper for their support with this project.

Appendix
Faculty Classroom Techniques

Please rate the frequency that you use the following techniques/tools/methods in your classroom. (Check ✓the appropriate box.)

	1 Never	2 Seldom	3 Sometimes	4 Often	5 Always
1. PowerPoint visuals					
2. Other visual aids (overheads, posters, charts, etc.)					
3. Films or videos					
4. CD-Rom or other electronic media					
5. Ice breakers					
6. Group work					
7. Mock debates					
8. Case studies (problem-based learning)					
9. Flip-charting or listing of student responses to open-ended questions					
10. Games					
11. Props					
12. Student peer reviews of work					
13. Music					
14. Role Play					
15. Guest Speakers					
16. Field Trip					
17. Demonstrations					
18. Other (Please name)					
20. Other (Please name)					

21. What percent of the typical class are you (the instructor) speaking/lecturing? _____%

22. Describe the formal training in classroom presentation skills.

23. Rate the impact of the following on your classroom skills. (Check ✓the appropriate box.)

	1 No impact	2 Little impact	3 Some impact	4 Much impact	5 Very much impact
a. Your temperament/personality					
b. Your effective teachers/professors					
c. Formal training on classroom skills (either college or training courses)					
d. Workshops/Seminars					
e. Professional conferences					
f. Reading books and articles on teaching and learning					

g. Observing your peers					
h. Mentoring from a master teacher					
i. Trial and error of techniques over time.					
j. Instructors' manuals from publishers					
k. Student Evaluations					
l. PTA (Primary Trait Assessment) Results					
m. RPT expectations					
n. Learning and Teaching Center					
o. Other…(Please name.) _____					

24. Describe one innovative teaching technique you have used in the classroom.

25. Years of experience teaching college_____

25. Circle one: Part-time Full-time

26. Circle one: Male Female