EDSE 590: Research Methods in Special Education

Instructor: Christina (Tina) Diamond, M.S.Ed.
Section #: 001
Time: 4:30 – 7:10 p.m. Tuesdays
Location: Innovation Hall, Room 326
Phone: 703-993-2380 (Counseling Center Receptionist)
Email: cdiamond@gmu.edu
Office Hours: (SUB I, Room 354) Wednesdays from 4:00-6:00 p.m. and by appointment.

Course Description
Describes fundamental concepts and practices in educational research in special education. Specific applications of educational research methods to problems in special education will be covered. Emphasis is on reviewing and critiquing special education research, and applied classroom research for teachers.

Student Outcomes
Upon completion of this course, students will be able to:

- Identify and understand different models of educational research suitable for different research purposes in special education
- Describe and discuss basic theories and methods of quantitative experimental and quasi-experimental research in special education
- Describe and discuss basic theories and methods of survey research in special education
- Describe and discuss basic theories and methods of single-subject research in special education
- Describe and discuss basic theories and methods of qualitative research in special education
- Describe and implement teacher applications of classroom research to address specific classroom problems.

Relationship of Courses to Program Goals and Professional Organizations
EDSE 590 is part of the George Mason University, Graduate School of Education, and Special Education Master’s Degree Program. The program aligns with the standards for teacher licensure established by the Council for Exceptional Children, the major special education professional organization in the United States. As such the curriculum for the course includes competencies for teaching students with disabilities from preschool through grade 12. The CEC Standards are listed on the following web site: http://www.cec.sped.org/ps/perf_based_stds/common_core_4-21-01.html

George Mason University
College of Education & Human Development
Graduate School of Education (GSE)
Program: Special Education

EDSE 590 Sec 001 Syllabus Spring 2006 Diamond
**Graduate School of Education Statements of Expectations**

The GSE expects that all students abide by the following:

- Students are expected to exhibit professional behavior and dispositions. See [http://gse.gmu.edu](http://gse.gmu.edu) for a listing of these dispositions.
- Students must follow the guidelines of the University Honor Code. See [http://www.gmu.edu/catalog/apolicies/#Anchor12](http://www.gmu.edu/catalog/apolicies/#Anchor12) for the full honor code.
- Students must agree to abide by the university policy for Responsible Use of Computing. See [http://mail.gmu.edu](http://mail.gmu.edu) and click on Responsible Use of Computing at the bottom of the screen.
- Students with disabilities who seek accommodations in a course must be registered with the GMU Disability Resource Center (DRC) and inform the instructor, in writing, at the beginning of the semester. See [www.gmu.edu/student/drc](http://www.gmu.edu/student/drc) or call 703-993-2474 to access the DRC.

**Statement Regarding GSE Portfolio**

It is recommended that students retain electronic copies of all course products to document their progress through the GSE Special Education program. Products from this class can become part of your individual professional portfolio used in your portfolio classes that documents your satisfactory progress through the GSE program and the CEC performance based standards. As the program moves towards electronic portfolios, it will be even more important to have artifacts saved electronically.

**Advising Contact Information**

Please make sure that you are being advised on a regular basis as to your status and progress through your program. You may wish to contact Amie Fulcher, GMU Special Education Advisor, at afulcher@gmu.edu or 703-993-2387. Please be prepared with your G number when you contact her.

**Nature of Course Delivery**

Learning activities include the following:

1. Class lecture, discussion, and participation.
2. Videos and other relevant multimedia presentations.
3. Study and independent library research.
4. Applications with relevant hardware and software.
5. Application activities.
6. Class presentations of papers and research projects.

**Required Texts**


Other readings relevant to special education applications assigned by instructor.

**Recommended**

Class Companion Websites

1. The class has a companion website on Blackboard: http://blackboard.gmu.edu. Log in and link to EDSE 590. You will be logged into Blackboard with your gmu.edu mail account. The syllabus, handouts, web links, and other course related information will be posted there throughout the semester.

2. The textbook has a companion website: http://www.ablongman.com/mcmillanschumacher6e that can be accessed to find relevant class information, including the weekly on line quizzes (both “fill-in-the-blank” and “multiple choice”) for selected chapters that must be submitted prior to class time. You may print hard copies of the chapter tests and bring them to class if you experience difficulties sending the tests via email.

NOTE

This syllabus may change according to class needs. If you need course adaptations or accommodations because of a disability or if you have emergency medical information to share with instructor or need special arrangements, please call and/or make an appointment with the instructor as soon as possible.

Evaluation and Points by Activity

Students will be evaluated on the following (100 points total):

10 points: Class attendance and class participation as demonstrated by completing and handing in weekly class activities and participating in class discussions and in the project presentation updates discussions throughout the semester. Excessive absences can result in additional penalties and potential withdrawal from class.

40 points: Completion of 1 of 2 options: Option 1: Written research application project; or Option 2: A 20-page research review paper, (see attached directions). Late projects will be penalized.

10 points: Final presentation of results of the research project or literature review paper using a poster session format*

10 points: Selected chapter tests (all tests for each selected chapter—both “fill-in-the-blank” and “multiple choice”) that are available on the website http://www.ablongman.com/mcmillanschumacher6e to be submitted prior to each class meeting to cdiamond@gmu.edu. When submitting tests from the website be sure to include your name and email address or I will be unable to give you credit.

5 points: Completion of GMU Mandatory Training for Persons Conducting Research Using Human Subjects available at http://www.citiprogram.org. Seven learner modules in the Basic Course are required prior to conducting any research at Mason using human subjects. In addition, if the information in any of the optional modules relates to your research, you are required to complete the appropriate modules. For more information visit: http://www.gmu.edu/pubs/osp/humansubjects.html.

10 points: Midterm exam

15 points: Final exam
* Refer to attached “Assignment Sheet” for more detailed descriptions of all assignments, scoring criteria and rubrics.

**Grading Criteria**

- A = 95-100%
- A- = 90-94%
- B = 80-89%
- C = 70-79%
- F = <70%

**Assignments**

**Select either Option 1 or 2 (40 points)**

**Option 1: Written research application project**

The research application project is designed to provide experience in designing, implementing, and evaluating a research application project in special education. Any of the research designs covered are appropriate. Be sure to have your research question and design approved by me before beginning to implement it as I can assist you with the design components and human subjects’ approval. Complete hard and electronic copies of the project should be submitted by 4:30 pm on the due date. Throughout the semester, you will provide present project updates during class based upon your project.

It is recommended that the following format be followed for a group comparison project: similar procedures should be followed for other designs such as case studies, single subject research designs, survey research and qualitative research.

**Questions of the Research Application Project:**

Sample questions: Does teaching using an activities-based approach to instruction facilitate learning and attitudes toward school and learning more than using a textbook approach with students classified as learning disabled (LD) and seriously emotionally disturbed (SED)? Does the use of social stories with children with autism reduce inappropriate behavior? What do general education teachers know about how to teach students with disabilities?

**Background Literature:**

Provide a brief description of the background literature that indicates a need for your question.

**Design of the Project:**

This section will be based upon your question. Sample design: Two groups of students with LD and ED will participate in the instruction. One group will be taught information using the activities-oriented approach and the other group will be taught the same information using the textbook approach. Time-on-task will be held equivalent across the teaching methods and all students will be given the same pre- and post-tests.
**Method:**

**a. Participants:** Use the following marker variables as guidelines to describe the participants in your applied project. Initially complete one of these for each student and then compute the averages and ranges and report that data. Staple your individual data sheets to your report.

- Student Identification #_______
- School Name_________________
- School Size____ Setting_____ (urban, suburban, metropolitan, rural)
- Special education classification______________
- Grade in school________________________
- Date of birth (month, day, year)______________
- Gender (Male or Female)_________________
- Race/ethnicity: Caucasian, African-American, Hispanic-American, Asian-American, other
- Socioeconomic status: (free lunch, reduced lunch, neither)_____ (high, medium, low)
- Years classified as special education student___________
- Amount of time per day in special education setting________
- Classes mainstreamed for inclusive instruction___________
- IQ: Full scale IQ_______, Verbal IQ________, Performance IQ______
- Achievement scores (specify test name and try to obtain standard scores, but report whether grade equivalent, percentiles, or other, too)
  - Reading achievement Test name
  - Math achievement Test name
  - Language achievement Test name
  - Spelling achievement Test name
  - Behavioral indices Test name
- Teacher report of study skills and classroom behavior:

**b. Materials for both conditions:** Carefully describe all of the instructional materials that were used in your project. Attach copies of the precise materials used in each teaching condition, including any teacher materials and student materials.

**c. Testing materials:** Carefully describe all of the testing materials that were used. Include copies of the pretest, and all posttests. Remember these measures will be used to describe whether or not your methods were "EFFECTIVE." Append copies of the students' completed measures. You may include a pretest of content, a posttest of content, attitude measures (e.g., I really enjoyed social studies when activities were used in class: 1 2 3 4 5), and you may include a measure of student involvement during class (e.g., audio or videotape students doing activities and text activities and compute engaged time on task).

**d. Procedure:** Carefully describe in a step by step fashion what you did in each instructional method. Be sure to describe how you incorporated the teacher effectiveness variables. Use the subheading **Both methods** to describe procedures that
were common to both methods. Use the subheadings (for example) **Activities Method** or **Textbook Method** to describe what was specific to those instructional conditions.

**e. Testing procedures:** Describe how the tests were administered. For example, were directions read aloud to the class and students worked independently, or were students given the exams individually, etc.

**f. Scoring procedures:** Describe how the tests were scored. For example, if tests consisted of multiple choice items, scoring is usually straightforward, however, if short answer items were used, then what was the scoring criteria? Was partial credit given, if so, explain how those decisions were made. Also, if you were attempting to score an active participation score during instruction, how was that assessed?

**Data Sources:**
Provide a listing of all of the sources of data you obtained. We will use this list to help determine the appropriate data analyses procedures.

**Results:**
Describe all of the testing results. You can present individual scores (use the same ID#s used in the demographic data sheets) and then compute a column average (we may learn several statistical tests that you will be able to use for analyzing your data). Charts and graphic displays of the data will be beneficial.

<table>
<thead>
<tr>
<th>ID#</th>
<th>Pretest</th>
<th>Posttest</th>
<th>Posttest-Pretest</th>
<th>Attitude</th>
<th>Engagement</th>
<th>Demographic data (age, gender, etc.)</th>
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<tbody>
<tr>
<td>Method A</td>
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| Method B|         |          |                  |          |            |                                      |
| 11      |         |          |                  |          |            |                                      |
| 12      |         |          |                  |          |            |                                      |
| 13      |         |          |                  |          |            |                                      |
| 14      |         |          |                  |          |            |                                      |
| 15      |         |          |                  |          |            |                                      |
| 16      |         |          |                  |          |            |                                      |
| Mean    |         |          |                  |          |            |                                      |
**Discussion:**
Provide a discussion of your findings. The first few sentences can provide summary accounts of the findings. For example, method A clearly facilitates the performance over method B, as every student in method A received 10 points higher on the same test. Or there were no differences between the method on the pre and posttests, however, all students were engaged more in class during method A and reported liking the instruction more than students in method B. Or, the activity-approach appeared to work best with students classified as LD and ED, but not mental retardation, as all students with LD and ED scored higher in method A, whereas, students with mental retardation performed similarly in both methods. You may also see difference by grade levels. For example, it may be that your intervention worked with all of your 3rd graders, but not with your 2nd graders.

Provide some insights as to why you might have obtained the findings. Provide a summary paragraph describing what you learned from the application project and how you could implement projects like this in your teaching to determine which methods work best with your students.

**Scoring Rubric: Option 1**

**Exemplary paper (36-40 points):** Appropriate topic, thorough and thoughtful review of previous research, appropriate and clearly described implementation procedures, careful measurement and evaluation of results, thorough and appropriate discussion of implications of findings. Good writing style, free of mechanical or stylistic errors, appropriate use of APA format.

**Adequate paper (32-35 points):** Good overall paper, lacking in one or two of the criteria for an exemplary paper. Not entirely reflective or thoughtful, or minor writing style errors may be present.

**Marginal paper (28-31 points):** Overall, acceptable but with one or more significant problems. Contains some useful information, but may have substantial problems with evaluation, writing style, or implementation of project.

**Inadequate paper (1-27 points):** Paper with substantial problems in important areas such as writing, implementation of intervention, evaluation of results, overall thoughtfulness. Contains little or no information of value to special education practice.

**Unacceptable/no paper (0 points):** Paper with no value whatsoever relative to the assignment, or no paper turned in at all. May describe a project of no value that was not approved for this assignment.

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<tr>
<th>Exemplary paper</th>
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<th>Marginal paper</th>
<th>Inadequate paper</th>
<th>Unacceptable/no paper</th>
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Option 2: A 20-page research review paper

You may select to complete a traditional research review paper of a selected intervention area. You will need to collect 20 original research studies on a particular topic to include in your review paper. Two complete hard copies and one disk version of the paper should be submitted on the due date. Have your topic approved prior to beginning. You should also prepare materials based on the paper to present to the class.

1. Select an area of interest in special education.
2. Complete a literature search of ERIC and PsycINFO to identify relevant original research articles (check for other relevant data bases).
3. Obtain and read original research articles.
4. Organize the information from the articles.
5. Write the paper using the American Psychological Association Publication Manual (5th edition) guidelines:
   - Title Page
   - Abstract
   - Introduction and Purpose
   - Method (literature search procedures)
   - Findings (this is the section that will vary according to your specific articles, but it might be something like the following: Overall characteristics of the studies (number of articles, types of students, ages, grades, disability areas, general descriptions of interventions, overall length of interventions, interveners, overall findings;)
   - Discussion – Summary and Conclusions
   - References

Scoring Rubric: Option 2

Exemplary paper (36-40 points): Appropriate topic, thorough and thoughtful review of previous research. Good writing style, free of mechanical or stylistic errors, appropriate use of APA format.

Adequate paper (32-35 points): Good overall paper, lacking in one or two of the criteria for an exemplary paper. Not entirely reflective or thoughtful, or minor writing style errors may be present.

Marginal paper (28-31 points): Overall, acceptable but with one or more significant problems. Contains some useful information, but may have substantial problems with evaluation, writing style, or review of relevant literature.

Inadequate paper (1-27 points): Paper with substantial problems in important areas such as writing, evaluation of research, overall thoughtfulness. Contains little or no information of value to special education practice.
Unacceptable/no paper (0 points): Paper with no value whatsoever relative to the assignment, or no paper turned in at all. May describe a literature of no value or relevance, or that was not approved for this assignment.

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<th>Unacceptable/no paper</th>
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Poster Session Presentation of results of Option 1 or Option 2 (10 points)

1. Be prepared to present a 5 to 10 minute oral summary of your written research project or literature review as you stand next to your poster that should highlight your project. Be prepared to answer questions about your project.
2. Prepare visual materials use in your presentation – use a poster board, power point slides, and copies of charts, graphs and photos. Refer to the photo under course documents on Blackboard for samples of posters and the AERA Poster Session Guidelines document on Blackboard.
3. Be prepared to explain clearly what you did
4. Prepare a one-page summary for classmates.
5. Hand in 1 electronic copy of your presentation materials and your one-page summary handout.

Research Application Project Poster

Prepare an overview of your paper using the following guidelines:
1. Title of research
2. Purpose of research
3. Background Review including statement of need
4. Method, including sample, materials, and procedures
5. Data Sources
6. Data analyses
7. Results (include charts or graphs)
8. Discussion and implications

Research Paper Presentation Poster Outline

Prepare an overview of your paper using the following guidelines (no more than 10 minutes):
1. Title of paper
2. Description of the Paper’s Topic
3. Literature Search Procedures
4. Overall Results of the Literature Search (# of research articles, names of journals, years of publication)
5. Overall Characteristics of the Data Set (total number of students, ages, grade levels, types of disability areas, types of strategies overall)
6. Major categories of areas [for example, Strategies and Descriptions of each (five studies on word problem solving for elementary students with ED; 5 on problem

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solving for secondary level students with LD) – this section will probably be the longest set of subheadings in your paper

7. Summary and Conclusions

Scoring Rubric: Poster Presentations

**Exemplary presentation (10 points)**: Poster clearly describes major elements of the proposal; poster reflects clarity, organization, knowledge and interest in the content being presented; reflects a high level of preparation; makes effective use of visual format and presents an interesting, attractive appearance; describes very clearly the methods under consideration; poster and discussion keep the audience engaged; provide information of interest and value to audience. Presenter is able to answer basic audience questions about the proposal with poise, clarity, and thoughtfulness.

**Adequate presentation (8-9 points)**: Good overall poster presentation, but may be lacking in one or two of the criteria specified in exemplary response. May seem a little less polished or prepared, may be vague in some places, or may fail to completely answer audience questions.

**Marginal presentation (6-7 points)**: Poster presentation provides relevant information, but demonstrates only a limited understanding of the topic or project. Style, organization, or visual elements may be less than adequate. Responses to audience questions may reflect lack of understanding of relevant research methods.

**Inadequate presentation (1-5 points)**: Weak overall presentation that reflects very little knowledge of topic or project. May appear very poorly prepared, or may not have followed directions. Style or visual elements may be inadequate or lacking.

**Unacceptable/no presentation (0 points)**: Completely unsatisfactory presentation, with no reasonable reference to topic or project; or no presentation made.

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<tr>
<th>Exemplary presentation</th>
<th>Adequate presentation</th>
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Chapter Tests (10 points)
Submit weekly chapter tests (as assigned).

Scoring Rubric: Chapter Tests

<table>
<thead>
<tr>
<th>90-100% of Tests Submitted</th>
<th>80-89% of Tests Submitted</th>
<th>70-79% of Tests Submitted</th>
<th>60-69% of Tests Submitted</th>
<th>&lt; 60% of Tests Submitted</th>
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<tbody>
<tr>
<td>10</td>
<td>8-9</td>
<td>6-7</td>
<td>1-5</td>
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</table>
Training for Persons Conducting Research Using Human Subjects (5 points)

Scoring Rubric: Training for Persons Conducting Research Using Human Subjects

<table>
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<tr>
<th>Completion certificate submitted to instructor by due date</th>
<th>Completion Certificate not submitted or submitted past due date</th>
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Tentative Class Schedule

<table>
<thead>
<tr>
<th>Class</th>
<th>Date</th>
<th>Topic</th>
<th>Readings</th>
<th>Due</th>
</tr>
</thead>
</table>
| Class #1 | 1/24/06| Class Introduction  
Overview of Research in Special Education  
Overview of Blackboard & Textbook websites | Ch 1                      |                                          |
| Class #2 | 1/31/06| Intro to research cont.  
Research Designs, Reading Research, & Research Problems | Ch 2 & 3                  | Ch 1 test  
Begin to identify final project topic |
| Class #3 | 2/7/06 | Protecting Research Participants  
Guest Presenter: Sandy Sanford (GMU Office of Research Subject Protections)  
If time permits, begin on-line training module | “Predictors of Success” Article on Blackboard  
| Class #4 | 2/14/06| Methods for Effective Literature Reviews & Using On-line Databases  
Guest Presenter: Sarah Sheehan (Meet in Johnson Center Library, 2nd floor Instruction Room) | Ch 4                      | Ch 4 test & Training for Persons Conducting Research Using Human Subjects |
| Class #5 | 2/21/06| Quantitative Methods: Subjects, Populations, Sampling, Data Collection, Procedures, & Validity  
Project Updates | Ch 6                      | Ch 6 test  
Project Updates (All) |

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<table>
<thead>
<tr>
<th>Class #</th>
<th>Date</th>
<th>Topic</th>
<th>Ch 7 &amp; 8</th>
<th>Ch 7 &amp; 8 tests</th>
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<tbody>
<tr>
<td>#6</td>
<td>2/28/06</td>
<td>Descriptive Statistics &amp; Quantitative Data Collection Techniques</td>
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<td>Review for Midterm</td>
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<tr>
<td>#7</td>
<td>3/7/06</td>
<td>Midterm</td>
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<tr>
<td>(No Class)</td>
<td>3/14/06</td>
<td>GMU Spring Break</td>
<td>Ch 9,10, &amp; 11</td>
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<tr>
<td>#8</td>
<td>3/21/06</td>
<td>Nonexperimental Designs, Surveys, Experimental &amp; Single-Subject Designs, &amp; Inferential Statistic</td>
<td>“RCT in Math &amp; Reading” Article on Blackboard</td>
<td>Ch 9, 10, &amp; 11 tests</td>
</tr>
<tr>
<td>#9</td>
<td>3/28/06</td>
<td>Qualitative Methods: Purposes, Research Questions, Sampling &amp; Data Collection Strategies Project Updates</td>
<td>Ch 12 &amp; 13</td>
<td>Ch 12 &amp; 13 tests Project Updates (Group 1)</td>
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<tr>
<td>#10</td>
<td>4/4/06</td>
<td>Qualitative Data Analysis &amp; Mixed-Methods Designs Project Updates</td>
<td>Ch 14 &amp; 15</td>
<td>Ch 14 &amp; 15 tests Project Updates (Group 2)</td>
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<tr>
<td>(No Class Meeting)</td>
<td>4/11/06</td>
<td>Independent work on Research Application Project or Research Review Paper,</td>
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<td>Work on Papers &amp; Presentations</td>
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<tr>
<td>#11</td>
<td>4/18/06</td>
<td>More on Analyzing &amp; Interpreting Data Writing Research Reports “Subgroups LD &amp; NLD” Article on Blackboard</td>
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<td>Work on Papers &amp; Presentations</td>
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<tr>
<td>#12</td>
<td>4/25/06</td>
<td>So what have we learned about research in special education? Summary and conclusions</td>
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<td>Option 1 or 2 due</td>
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<tr>
<td>#13</td>
<td>5/2/06</td>
<td>Student Poster Presentations</td>
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<td>Poster Presentations</td>
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<td>Final Exam</td>
<td>5/9/06</td>
<td>Final Exam</td>
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*To find the Instruction Room, enter the Johnson Center Library on the main floor (with the bookstore and the food court). Walk behind the check out desk and take those stairs to the second floor. The Instruction Room is in the back corner.*