

Oral Final Examination: Feasibility for a Pre-Licensure Pharmacology Course

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Background



Shift to online learning came with a dramatic increase in Academic Integrity Violations

- Opportunity
- Some colleges bar the use of online proctor systems



BSN essentials focus

- Variety of assessment
- Clinical judgement and decision making

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History and Literature Review

- Prior to easy printing, oral examination was routine
 - Common in Medicine
- Limited literature
- Crecilus et al (2021) found an oral physiology final
 - Had students prep earlier
 - Served as platform for feedback before high stakes written exam
- Iannone et al (2020) used oral exam in a mathematics course
 - Students reporting engaging more deeply
 - More conceptual learning
- Zhao (2018) created an optional oral midterm for thermodynamics
 - Students then scored higher on final
 - Found the course/faculty more "friendly"

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Course Opportunity: Pharmacologic Interventions



Sophomore nursing students



Two class sections



Modified flip design existing



Traditional pen/pencil in class exam

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Procedures



- Decision to administer oral final
- Design
 - Scaffolding assignments to build competency
 - Focus on clinical decision making based on scientific understanding
- Describe
 - Clear description in the syllabus -15% of grade
 - Discussion from Day 1
- Standardize
 - Case studies created with Sim Faculty input
 - Set of questions & rubric
 - Interrater reliability with administering faculty
- Deliver

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Teamwork to Individual Activity



Faculty team and group work formed the foundation

Students practiced case studies in small groups via Zoom

Senior nursing students mentored along with faculty in clinical decision making.

Simulation faculty provided support, guidance, run through and standardization assistance



Case study presentation then Final Exam

Each student presented a case study to their group

Final exam 1:1

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The Oral Final

- 15 min. per student via Zoom
- 1 of 10 possible scenarios
 - 69 y/o male admitted with diverticulitis. Married, non-smoker, 2 alcoholic drinks per day, moderate exercise.
- Immediate Grading
- Mini-Debrief

QUESTIONS	CRITERIA	POINTS
Therapeutic Class (TC)	Correctly ID 5 Drugs TC 1____ 2____ 3____ 4____ 5____	7.5
Pharmacologic class (PC)	Correctly ID 5 Drugs PC 1____ 2____ 3____ 4____ 5____	7.5
Identifies any errors in med rights/discusses potential		5
Identifies nursing assessment prior to dosing (minimum = 3), must be specific with rationale -1/2 credit allowed	1____ 2____ 3____	15
Discusses precautions of at least one medication (reproductive health, black box etc.) deduct 5 points if high risk elements missing (e.g. ok's an ACE and ARB together or misses reproductive issue of methotrexate)	1____	10
Discusses appropriate administration (e.g. with/without food, push fluids etc.)	1____ 2____	10
Discusses monitoring of medication in terms of labs, history and physical—1/2 credit if vague or rationale missing	1____ 2____ 3____ 4____ 5____	20
Correctly responds to 'what if' scenarios in terms of give/hold and can create an SBAR	Correct? ___ (5) SBAR ___ (5)	10
Discusses patient education related to med—deduct 5 points if high risk elements missing (e.g. taper benzoc)	1____ 2____ 3____ 4____ 5____	15
TOTAL		

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Evaluation: Course Evaluation



- **Final Exam Grades**
 - 2020: 66-95 (M= 81.36)
 - 2021: 65-95 (M= 83.43)
- **Course Evaluation Scores**
 - 2020
 - N= 18/64
 - Course M = 4.6/5
 - Ability to think critically: 4.62/5
 - Fair grading: 4.55/5
 - 2021
 - N= 46/80
 - Course M = 4.2/5
 - Ability to think critically: 3.9/5
 - Fair grading: 3.92/5

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Evaluation: 4 Month Reflection

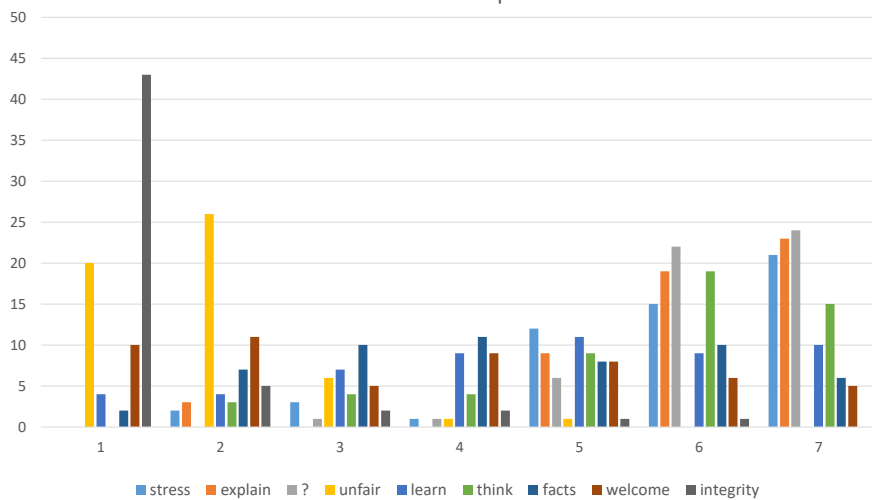
- Deemed exempt by IRB
- Qualtrics survey to all students who took the final (N=77)
- 7-point Likert scale
 - Strongly disagree to strongly agree
 - Two questions reverse statements
- 9 statements
- Open ended reflection
- Response rate
 - 54/77
 - 70.1%



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Results

Final Exam Perceptions



1= strongly disagree; 4= neither agree/disagree; 7= strongly agree

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On Average....

Statement	Mean	SD	Mode
The online final exam increased my stress during the semester compared to traditional exams	5.8	1.3	7
The expectations for the oral final were clearly explained	6	1.2	7
I was given the opportunity to ask ?s prior to the exam	6.2	0.9	7
The exam was graded in an unfair manner	1.8	0.8	2
I learned more facts due to the oral final compared to a traditional final	4.6	1.8	5
I used critical thinking skills as part of the studying and taking the oral final exam	5.5	1.4	6
Now that I reflect, I remember fewer facts	4.3	1.7	4
I would welcome the opportunity to take an oral final in the future	3.6	1.96	2
Easier to Cheat	1.4	1.1	1

1= strongly disagree; 4= neither agree/disagree; 7= strongly agree

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Qualitative Feedback

We also learned about hundreds of drugs throughout the semester, so being expected to know specific information about every single one and then explaining that information in a type of exam that already creates extra stress and anxiety felt like a very poor combination.

I thought this exam was beyond more stressful than a traditional exam; not only was I scared, but I was worried about how much time I would have to think and process on the spot with the short time frames.

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Qualitative Feedback

The exam was stressful, however it allowed me to use the knowledge I had to work through questions and material beyond my knowledge.

I preferred the oral exam...because I studied for it in a way that trained me to think critically as a nurse. The exam helped boost my confidence in my abilities to educate a patient and apply my pharmacology knowledge to a case study; I realized that I know more than I gave myself credit for.

The final exam being oral made you actual have to know what you were talking about instead of the traditional way where it feels like you are just regurgitating what the book already says.

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Conclusions

Pros

- Reduced likelihood of academic integrity violation
- Contextual and in moment discussion makes evaluating clinical judgement and decision making easier
- Students perceive increased critical thinking

Cons

- Students experience substantial anxiety despite a low impact on grade and scaffolding
- Novel nature difficult for some
- May not increase long term knowledge retention

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Best Practice



- Implementation
 - Inclusion in syllabus from day 1
 - Scaffold assignments
 - Build competency to take an oral final across levels
- Research
 - Long term outcomes
 - Clinical judgement and decision making
 - Knowledge
 - NCLEX pass rate
 - Transition to practice
 - 1- and 5-year student evaluations
 - Randomization
 - Within program and comparative with institutions