ADVANCE PRACTICE NURSING (APN) STUDENTS USE OF STANDARDIZED TESTING

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Conflict of Interest/Disclosure

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Objective

◦ Describe the various implementation & evaluation strategies for standardized testing with the graduate APN curriculum.

Background

◦ Advanced Practice Nurse (APN) education is expanding worldwide (i.e., Australia, Canada, Germany, Hong Kong, Mainland China, United Kingdom, and United States).

◦ In the 2015-16 academic year, the U.S. had an estimated 23,000 nurse practitioners who completed their academic programs and joined the ranks of an estimated 234,000 practicing APNs.

◦ Of the APNs in practice, approximately 49.9% hold hospital privileges and 95.8% prescribe medications.

AANP (2017) National Nurse Practitioner Sample Survey

Purpose

◦ To ensure that APN graduates are prepared to provide these services and to meet state mandated regulations, certification is required.

◦ U. S. schools that provide APN programs are also evaluated on the ability of their graduates to pass the certification exam and become licensed as APNs in their respective states.

Background

◦ APN certification bodies:

  ◦ American Association of Nurse Practitioner Certification Board (AANPCB) initial exam pass rates 2016
    ◦ Family NP – 81.6%; Adult-Gero NP – 75.7%; Total 17,607 – 80.6%

  ◦ American Nurses Credentialing Center (ANCC) initial exam pass rates for 2016
    ◦ Family NP - 5,107 – 82%; Adult-Gero – 1,309 – 80%

Background

◦ Graduate APN faculty are using Standardized Testing to:
  ◦ Assess students' potential for success on certification examinations,
  ◦ To identify concepts needing additional remediation, and
  ◦ To identify areas of strengths and weaknesses within the APN curriculum.

◦ In preliminary research, HESI APRN scores of 700 or above was 99.5% predictive of certification success. (Willson & Goodman, 2015)

Design

◦ An ex post facto descriptive correlational and comparative design was used to assess the correlation of the specialty exams with the exit exam and the pass rates for each of the scoring intervals on the specialty and exit exams.

◦ Electronic surveys were mailed to directors of 114 graduate nursing schools that administered the APN Exam for Family and/or Adult Gerontology to APN students during the 2009 - 2015 academic years.

◦ Data were collected regarding students APN national certification examination outcomes and the schools' implementation strategies and policies.

Methods

◦ IRB approval

◦ Participants were asked to identify outcomes for students in their program on their first attempt at certification, as well as to answer several questions regarding testing and remediation policies implemented at their school

◦ To protect subjects' anonymity, data regarding student certification exam outcomes were reported to the research team as aggregate data only

Methods

- The sample was drawn from Elsevier's HESI™ APRN Exit Exam users for Family NP, Adult-Gerontology, and 3 P specialty exams:
  - Timeframe – Academic years 1 September 2013 through 31 August 2016.
  - Deans/Directors were queried via password protected email survey
  - Phase I –Testing Policies & Practices
  - 114 graduate nursing schools were invited; 15 schools responded to the Questionnaire – 13.15% response rate
  - Phase II – Predictive Accuracy of HESI APRN Exit Exam
    - 489 student certification outcomes were reported (Unknown=192)

Outcome Measures

◦ HESI™ APRN Exit Exams Scores
  ◦ 110-item (10 pilot items) comprehensive exam Family & Adult-Gerontology Exams
  ◦ Most schools administered the E2 within 6 weeks prior to completion of the nursing curriculum
◦ Certification Outcomes
  ◦ First time test takers
    ◦ Pass/Fail or Unknown
    ◦ School of Nursing HESI E2 Policy Components
    ◦ Preparation/Remediation & Consequence Components

Instruments

◦ Phase I - HESI APRN Exit Exam Practices/Strategies Questionnaire
  ◦ 13-item multiple choice and open textbox electronic survey
◦ Programs Testing Policy
  ◦ Benchmark use
  ◦ Strategies used to prepare for the Exam
  ◦ Duration of time allotted to preparation
  ◦ Re-testing practices
  ◦ Remediation used
  ◦ Consequences of the Exit Exam

Instruments

- Phase II – Certification Outcome Sheet by Student HESI Scores
- Student information: HESI scores were provided to the faculty participants via email using a password protected excel document.
- Faculty participants provided the following certification information for each student : PASS/FAIL/UNKNOWN/Did not Graduate.
- Faculty de-identified the Outcome Sheet by removing the student names.
- Emailed return with password protection.

Results – Predictive Validity

- Certification outcomes were reported for 489 APN students.

- Students' scores varied from 315 to 1168 on the Adult Gerontology Exam with a mean score of 736. Scores on the Family Exam varied from 366 to 1246 with a mean of 752.

- Scores of 900+ predicted pass rates on the Adult Gerontology and the Family Certification Exams 100% of the time.

Number and Percent of Students by Scoring Category & HESI APRN Family Exam Scores (N=356)

Scoring Category	HESI APRN Score	N	Percent
A/B	900+	42	100%
C	850-899	28	93%
D	800-849	58	100%
E/F	700-799	113	91%
G/H	<699	115	91%
TOTAL		356	

Number & Percent of Students by Scoring Category & HESI APRN Adult Gerontology Exam Scores (N=141)
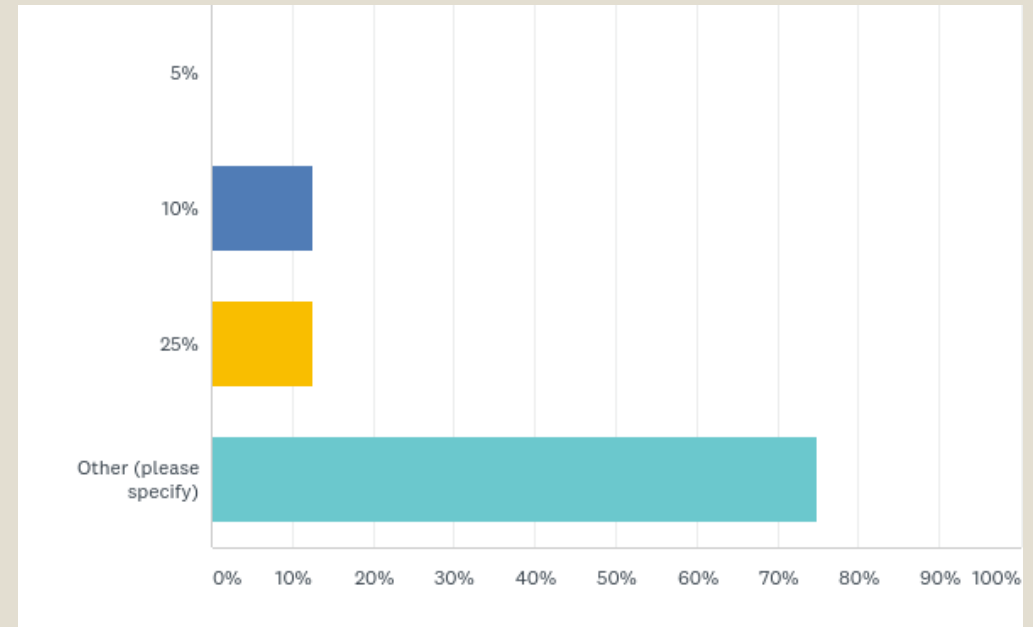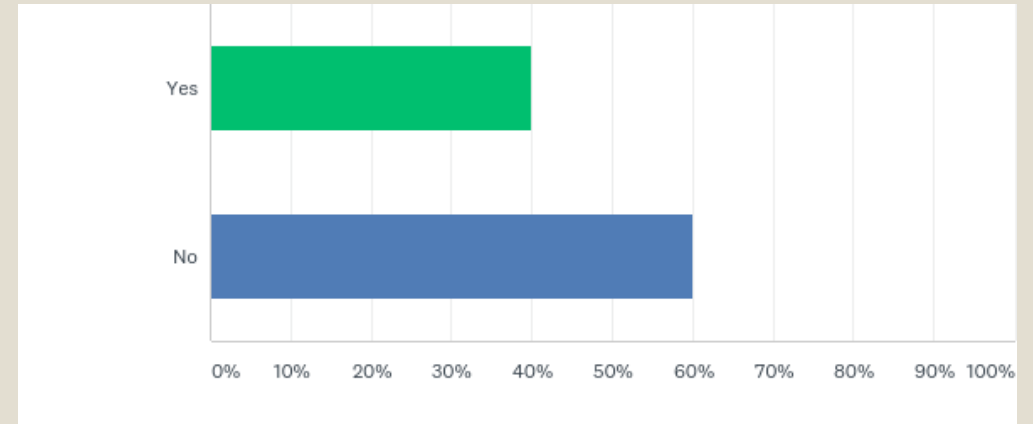
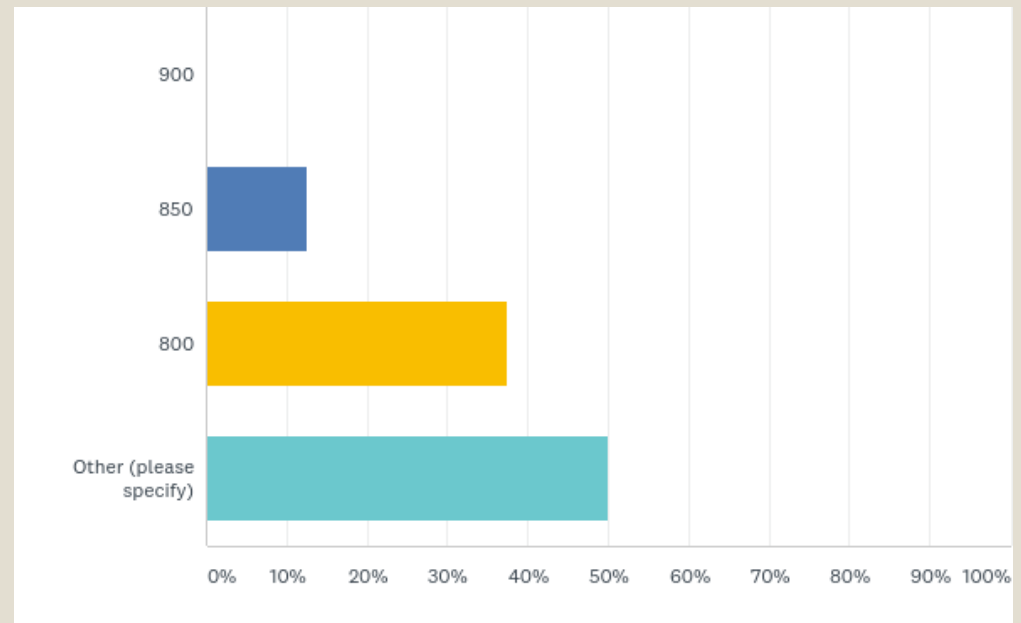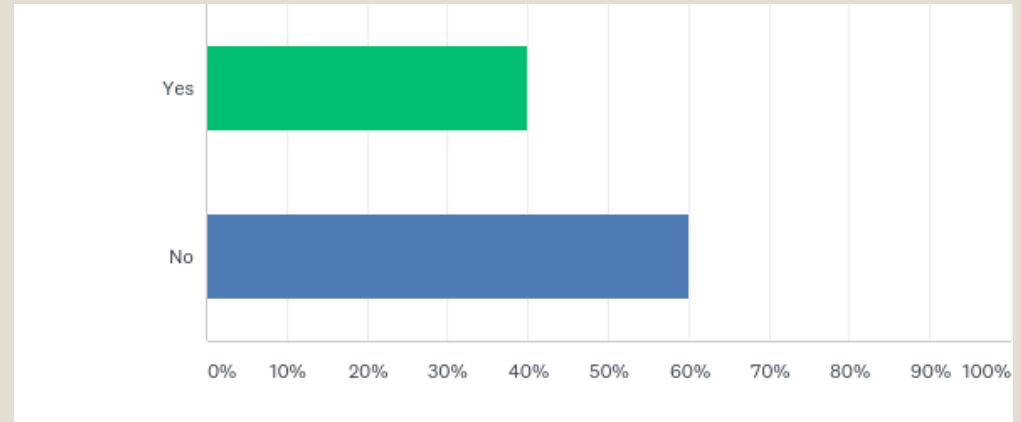| Scoring Category	HESI APRN Score	N	Percent
A/B	900+	17	100%
C	850-899	12	100%
D	800-849	15	100%
E/F	700-799	48	100%
G/H	<699	49	100%
TOTAL		141	

Results

- Q1: Does the HESI APRN Exit Exam count toward the student's course grade?
  - 40% of the time

- Q2: If Yes, what is the percentage of the course grade?
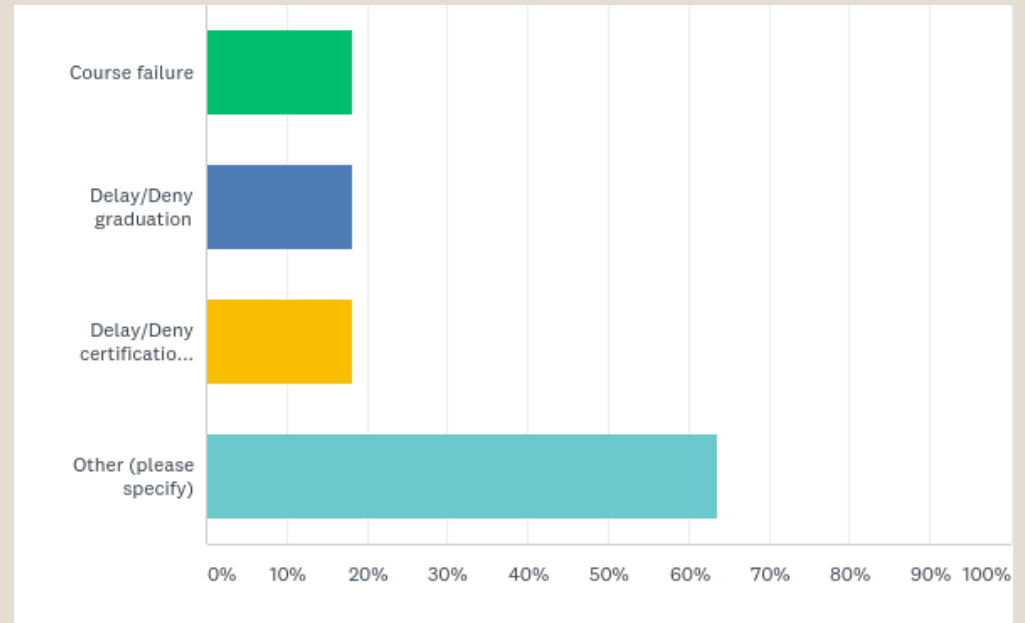 - 75% count more/less than 10% or 25%

Results

◦ Q3: Does your APRN program have an exit exam program policy?

  ◦ 40% have an exam policy

◦ Q4: If Yes, what is your benchmark score?

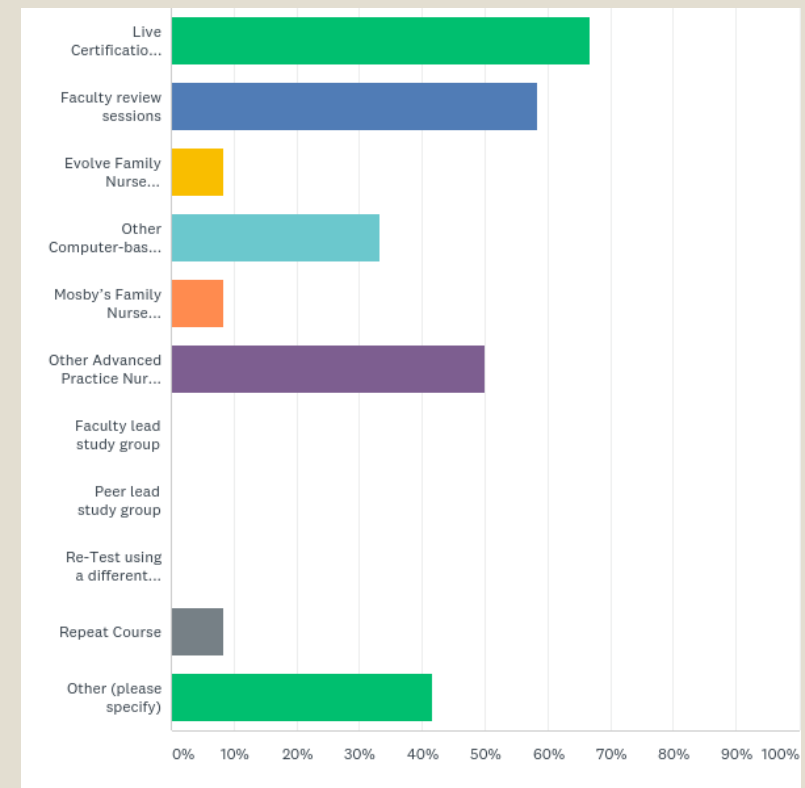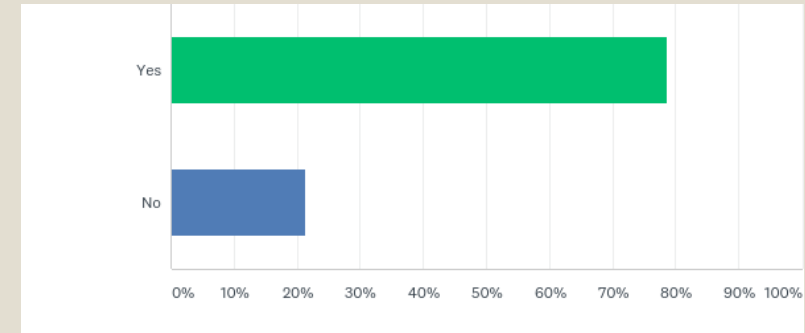 ◦ 800 was the most common benchmark score used

Results

- Q5: If students fail, what consequences occur? (Check ALL that apply)
  - Course failure 18%
  - Delay/Deny graduation - 18%
  - Delay/Deny program completion letter – 18%
  - 64% - other

Results

- Q6: Are remediation strategies implemented to facilitate certification success?
  - 79% (11/14 schools)

- Q7: If Yes, what remediation options do you use?(Check ALL that apply)
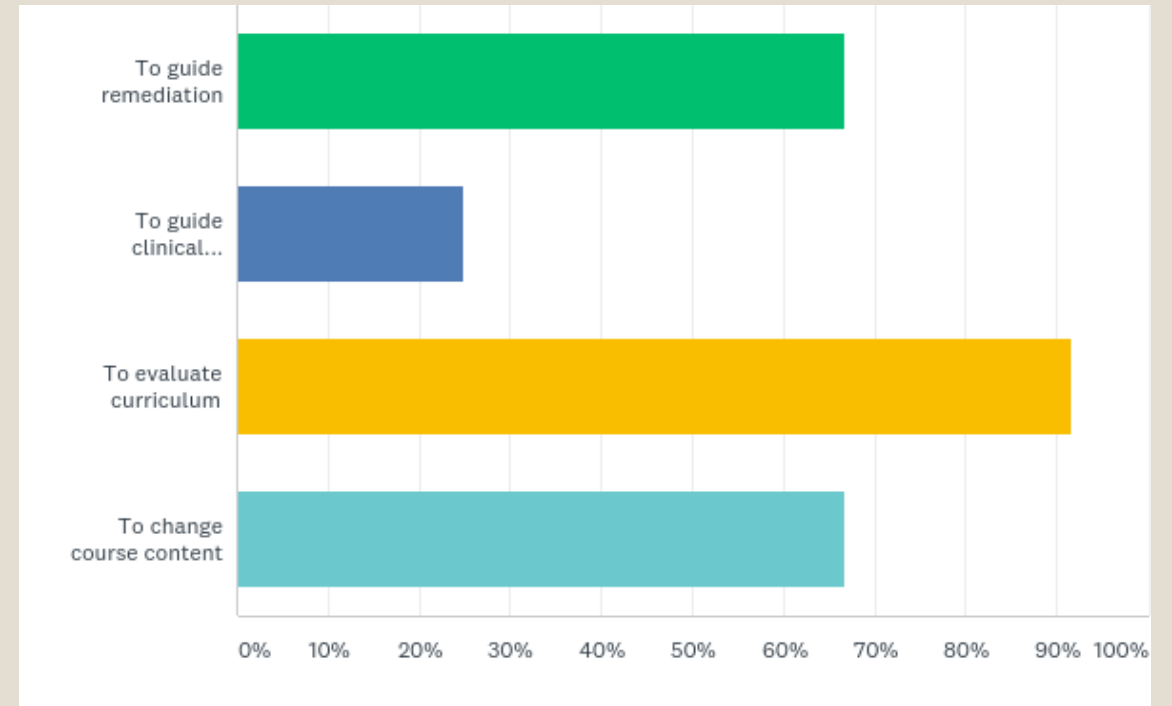 - 67% live certification Prep course

Results

- Q8: Is remediation required or recommended?
  - 79% (11/14 schools)
  - 31% Required
- Q9: Is there a test review after the exam?
  - 42% yes
- Q10: How is the test review used? Check all that apply.
  - 42% immediate, individual review

ANSWER CHOICES	RESPONSES	
Immediate review in class of all test questions with rationale for the correct answer.	16.67%	2
Immediate review in class of the general topic of the question with the correct answer and rationale.	16.67%	2
Individual review of missed questions, correct answers and rationales.	33.33%	4
Individual review of the general content of missed questions, correct answers and rationales.	0.00%	0
Individual review of the entire test with answers and rationale.	0.00%	0
Immediate review of the test by individual students using the online answers and rationale.	41.67%	5
Group review at a later time using the question with options and rationale	0.00%	0
Group review at a later time with general content of each question and rational for the correct answer.	8.33%	1
Other (please specify)	16.67%	2
Total Respondents: 12		

Results

○ Q11: When do you give the HESI APRN Exit Exam?

    ○ 80% near end of program

○ Q 12: How do you use the HESI APRN Exit Exam score report? (Check ALL that apply)
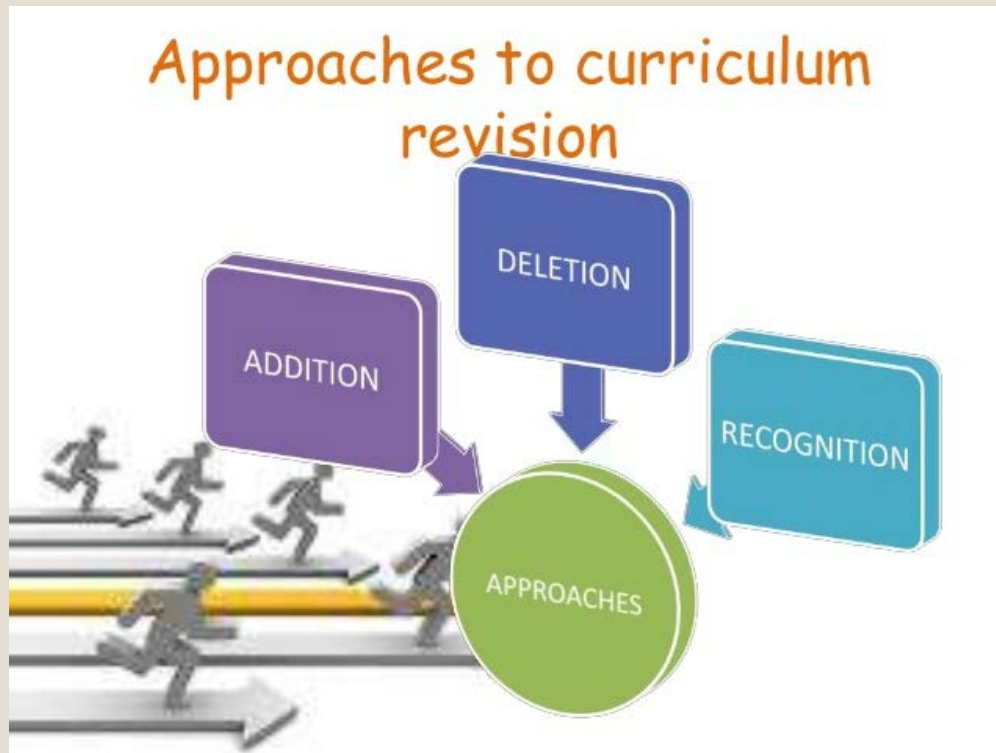
    ○ 92% to evaluate curriculum

ANSWER CHOICES	RESPONSES	
To guide remediation	66.67%	8
To guide clinical preceptor experiences	25.00%	3
To evaluate curriculum	91.67%	11
To change course content	66.67%	8
Total Respondents: 12		

Remediation & Evaluation

◦ Results from a national, multi-site, United States sample of graduate programs support that electronic standardized end of program assessments are highly accurate at predicting APN certification success.

Assessment & Evaluation

Approaches to curriculum revision

ADDITION
DELETION
RECOGNITION
APPROACHES

◦ End of course APN exams are utilized by faculty to determine their students' standings compared to the national sample.

   ◦ To identify cohort concept/content weakness.
   ◦ To provide input into curricular revisions.

Conclusions

◦ These findings are consistent with prior benchmark setting studies for this APN exam which set minimum scores of 750 or higher.

◦ Testing summary reports gave faculty input for curricular evaluation.

◦ Few schools had:
  ◦ Testing policies,
  ◦ Established benchmark scores, or
  ◦ Counted the standardized exam as part of course grades.

◦ The most frequently cited remediation strategy was tutoring by live review courses by national firms.

Conclusions

◦ Future directions:
  ◦ Schools collaborating to determine, individual students success rate…
  ◦ Pooling data for more specific correlations of outcomes with various standardize testing products…

Questions

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References

◦ American Association of Nurse Practitioners. (2017). NP Fact Sheet. Retrieved from: https://www.aanp.org/all-about-nps/np-fact-sheet

◦ The International Council of Nurses (ICN) Nurse Practitioner/Advanced Practice
  ◦ Nursing Network Subgroup 'Practice' and the Core Steering Group (CSG). (2014). ICN Nurse Practitioner/Advanced Practice Nursing Network Country Profiles. Retrieved from: https://international.aanp.org/Practice/Profiles

◦ Willson, P. & Goodman, J. (2015). Standardized testing to predict APRN Credentialing Success: What is the Science? The Internet Journal of Advanced Nursing Practice, 14(1). DOI: 10.5580/IJANP.32179.