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Use of Best Practices in Exam Item Creation, Analysis, and Revision: Nursing Faculty's Knowledge, Use, and Implementation Barriers and Facilitators

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Use of Best Practices in Exam Item Creation, Analysis, and Revision: Nursing Faculty's Knowledge, Use, and Implementation Barriers and Facilitators

Julie A. De Haan EdD, RN

Background

- Educators from several disciplines, including nursing, have identified best practices for exam item creation, analysis, and revision.
- Nursing faculty use of best practices for exam creation remains inconsistent
- Previous research identified barriers that prevent nursing educators from using exam item best practices (EIBP)
- Conversely, several facilitators of faculty use of EIBP have also been identified.

Significance

- Nursing faculty are content experts. As nurses, they know how to care for patients, however, faculty are not necessarily prepared to teach nursing or create reliable and valid assessments.
- Multiple choice questions continue to be the most prevalent assessment method in nursing education.
- Faculty's ability to design reliable and valid assessments increases with the use of EIBP.

(Cox, 2019; Khafagy, Ahmed, & Saad, 2016; Oermann & Gaberson, 2021, O'Rae, Hnatyshyn, Bock, Mannion, & Patek 2019).

Purpose of research

- Examine relationships between nursing faculty's demographic, individual, environmental, and social factors and their knowledge and use of exam item best practices.
- Examine what nursing faculty identified as potential barriers and facilitators of exam item best practices implementation

Research Design & Method

- The research was completed by using a quantitative cross-sectional design with data collection via a Qualtrics survey sent to nursing faculty across the United States via email
- Exam item best practices (EIBP) compiled from current literature
- Participants asked to rate how frequently they used EIBP
- Response choices included: not familiar with practice (0), do not use (0), sometimes (1), half of the time (2), most of the time (3)
- Each participant received an EIBP score.

Results

- Once collected, data analysis completed using SPSS
- **Results confirmed that faculty inconsistently use EIBP.**

EIBP most frequently used (0-3)		EIBP least frequently used (0-3)	
Use appropriate vocabulary (avoid colloquialisms or slang terms)	2.95	Consider three option items instead of 4-5 option items	1.01
Write exam items free of grammatical and structural errors	2.93	Develop a blueprint	1.46
Protect the integrity of the exam	2.91	Specify the desired difficulty and discrimination level of the items	1.74
Ensure instructions are concise, clear, and not open to further explanation	2.88	Emphasize key words (e.g. best, priority, first)	1.78
Ensure all options grammatically consistent with the stem	2.87	Corroborate with peer to complete review of exam items	1.84
Proofread exam for understandability and conflicts between questions	2.86	Use clinical vignettes/scenario based	1.97

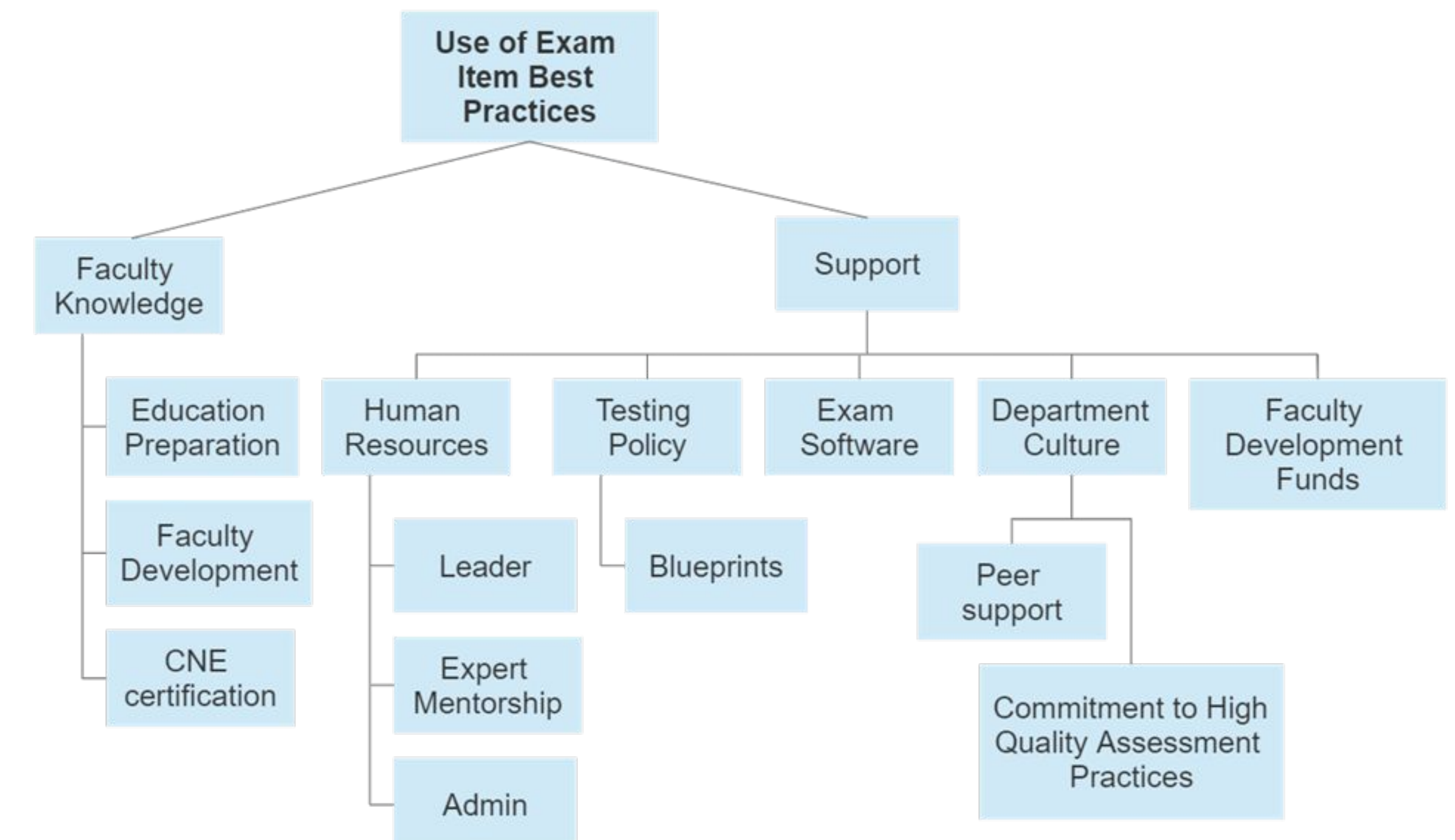
Faculty predictors of higher exam item best practice scores:

- More years of experience
- Frequency of writing exam items
- CNE certification

Rank	Barrier (Top 5)	Percentage	Rank	Facilitator (Top 5)	Percentage
1	Time constraints	84.6	1	Faculty development regarding exam item best practices	59.5
2	Lack of faculty development re: item revision	69.4	2	Exam item mentoring for new faculty	46.7
3	Lack of educational preparation	63.7	3	Faculty within the department with expertise in EIBP	37.7
4	Lack of administration support	61.9	4	Testing policy which includes EIBP	32.5
5	Lack of faculty development re: item creation	61.1	5	Administration support for use of EIBP	26.3

Implications

- Faculty identified faculty development and expert mentorship as facilitators.
- Nursing leaders should consider faculty development regarding exam item creation, analysis, and revision.
- Nursing leadership should acknowledge that experience matters and create opportunities for faculty with more expertise to mentor newer and less experienced faculty (Moore, 2020).
- Encourage faculty to obtain CNE certification.
- *See diagram below for the support system elements which contribute to EIBP use.*
- Use of EIBP increases how assessments can contribute to the formation of students' clinical judgment skills (Oermann & Gaberson, 2021).



Complete list of Exam Item Best Practices compiled for this research project can be accessed [here](#) or via QR code:



Limitations

- With research surveys, respondents may be vested in the survey topic
- A list of EIBP has not been adopted by nursing education organizations.
- Exclusion of nursing faculty may have occurred secondary to the availability of email addresses, which limited the pool of potential respondents and may have impacted the validity of data secondary.

References

- Cox, C. W. (2019). Best practice tips for the assessment of undergraduate nursing students via multiple choice questions. *Nursing Education Perspectives*, 40(4), 228-230.
- Khafagy, G., Ahmed, M., & Saad, N. (2016). Stepping up of MCQs' quality through a multi-stage reviewing process. *Education for Primary Care*, 27(4), 299-303.
- Moore, W. (2020). Does faculty experience count? A quantitative analysis of evidence-based testing practices in baccalaureate nursing education. *Nursing Education Perspectives*, 42(1), 17-21.
- Oermann, M. H., & Gaberson, K. B. (2021). *Evaluation and Testing in Nursing Education* (6th ed.).
- O'Rae, A., Hnatyshyn, T., Bock, A. J., Mannion, C., & Patek, S. (2019). An appreciative inquiry into nursing educators' exam practices. *Nursing Education Perspective*, 40(4), 234-235.

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