Using Q Methodology to Evaluate Curricular Outcomes in a Baccalaureate Nursing Program

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Background: Measuring outcomes and using data for program improvement is an accreditation requirement. The weakness of data obtained on Likert scales is that it gives information based on the perspective of the person constructing the test (Brown, 1980). Q methodology offers a an alternative person-centered method to objectively evaluate program outcomes (Ramlo, 2015). Through the sorting process participants assign meaning to stimuli (Simon, 2013). By-person factor analysis is then used to find participants with unique shared viewpoints (Watts & Stenner, 2012). Assessing how students integrated specific values into their professional identity is one example of how Q methodology has been used to evaluate achievements of nursing program outcomes (Hensel, 2014).

Purpose: The purpose of this Q methodology study was to evaluate how well our program prepared students to work in diverse healthcare environments before and after implementing a new concept-based curriculum with increased exposure to community health.

Methods: The recruited sample consisted of BSN students near graduation from the old traditional (N=34) and new concept-based curriculum (N=34). Students sorted 45 images of patients in diverse care environments printed on a deck of cards according to how much they agreed that they might care for that type of patient after graduation.

Images	Pediatrics	Maternal-Newborn	Adult	Older Adult
Inpatient (N=22)	19, 31,3, 39,20	40,2,10,13	34,24,9,16,28,23,38	6,33,32
Outpatient (N=23)	22,14,11,12	26,18,1	37, 25,29,30,27, 16,4,7,8	36,35,21.32,5,15

Preferences were recorded on a -5 to +5 forced distribution sorting sheet. Data were analyzed using PQMethod software in a standard approach described by Watts & Stenner (2012) involving the generation of a correlation matrix, centroid factor analysis with varimax rotation, and calculation of factor scores for each group.

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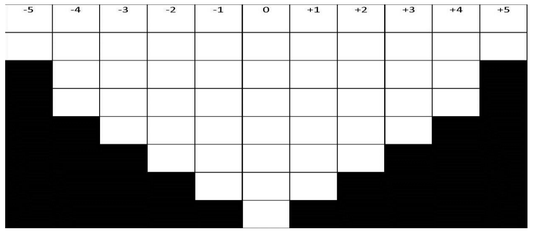
Sorting Sheet



Factors from Old Curriculum

Factor	Most Agree		Most Disagree	
Factor 1: Adult critical care 18% of variance		9 defining sorts +5 Intubate ICU +4 Getting CPR +4 Oxygen in ED +4 PACU		Peds &Community -5 Child in halo cast -4 Group therapy -4 Premie in NICU -4 Peds chemo
Bipolar Factor **Factor 2 a: Pediatric** **Factor 2b: Older Adults** 24% of variance	 	10 defining sorts +5 Premie in NICU + 4 Cleft palate baby +4 Child in hospital +4 Peds Chemo 3 defining sorts +5 Med-surg female +4 Post eye surgery +4 Med-surg male +4 Assisted living	 	Community settings -5 Global clinic -4 Exercise class -4 Military health -4 Amputee in rehab Family & children -5 Breastfeeding -4 Prenatal care -4 C-section -4 Peds chemo
Bipolar Factor **Factor 3 a: Maternal-Newborn** **Factor 3b: Emergency care** 16% of variance	 	7 defining sorts +5 Breastfeeding +4 C-section +4 Mom& baby in global clinic +4 Prenatal care 2 defining sorts +5 Mass casualty +4 Getting CPR +4 Oxygen in ED +4 Intubated ICU	 	Critical care -5 Intubate ICU -4 Getting CPR -4 Oxygen in ED -4 Cardiac surgery Family -5 Prenatal care -4 Breastfeeding -4 Mom & aby in global clinic -4 Prenatal classes

Note: Three sorts represented confounding loads.

References:

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Ramlo, S. E. (2015). Q methodology as a tool for program assessment. *Mid-Western Educational Researcher*, *27*(3), 207.

Simons, J. (2013). An introduction to Q methodology. *Nurse Researcher*, *20*(3), 28-32.

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Factors from New Curriculum

Factor	Most Agree		Most Disagree	
Bipolar Factor **Factor 1 a: Maternal Newborn** **Factor 1b: Older Adult in the Community** 24% of variance	 	5 defining sorts Families +5 C-section +4 Breastfeeding mom +4 Cleft palate baby + 4 Premie in NICU 4 defining sorts Older adults in community +5 Group exercise +4 Using walker +4 Flu shot clinic + 4 Getting dialysis	 	Adults -5 Group therapy -4 Hospice -4 Group exercise -4 Adult in ED Children & Families -5 Premie in NICU -4 C-section -4 Mom &baby in global clinic -4 Child in halo cast
Factor 2: Critical Care 17% of variance		11 defining sort Adults +5 Intubated ICU +4 Getting CPR +4 PACU +4 Oxygen in ED		Community -5 Group therapy -4Exercsie class -4 Prenatal classes -4 Amputee in rehab
Factor3: Emergency Care 19% of variance		7 defining sorts Adults +5 Getting CPR +4 Mass casualty +4 PACU +4 Intubated ICU		Pediatric -5 Premie in NICU -4 Peds chemo -4 Cleft palate baby -4 Child in halo cast

Note: Five sorts represented confounding loads; 2 sorts did not load

Discussion

The curricular change increased exposure to community health but also ceased teaching pediatrics as a separate course.

- A new perspective emerged for caring for older adults in community versus hospital settings.
- Preference for caring for pediatric patients was not retained with integration of content as concepts.

Critical care remained a stand alone course and clinical hours spent in critical settings did not decrease.

- Critical care d emergency care perspectives persisted
- Images of medical- surgical hospital patients did not emerge as preferences in the new curriculum.

Conclusion

Changing levels of clinical exposure can result in changes in students' preferences for future work environments. Mindful changes in settings for clinical education may help to promote a more balanced workforce.