

# Segmenting students according to motivation and perceived task performance on the use of ultrasound in anatomy class: a Q methodologic analysis

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## Introduction

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Learning is a process by which an individual, the learner, experiences permanent changes in either knowledge or behavior. Intrinsic motivation is defined by several theories which, even when taken collectively, have failed to completely explain this theoretical construct. And yet it is a powerful force that guides an individual as to the direction he should take. The medical curriculum has changed its focus. Veering away from pen and paper teaching modalities, it has accepted the challenge of integrating technology into the different teaching strategies.

## Objectives

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Ultrasound integration was highly anticipated by the millennial students of today who belong to a technological era that takes pleasure in the use of technological gadgets (ultrasound) to further enhance their knowledge of chosen anatomical structures. This seems to have a positive impact on student motivation. Several theories have attempted to explain intrinsic motivation and its role in influencing learning capabilities. The University of Santo Tomas Faculty of Medicine and Surgery pioneered the integration of ultrasound in the undergraduate medical curriculum. After 5 years, it is timely to evaluate students' perceptions regarding this innovative teaching technique.

## Materials & Methods

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Q methodology is an exploratory research technique that deals with subjective studies where it is the participants' views that are at the center of investigation. Each participant ranked 25 statements into the Q sort table in a fixed quasi-normal distribution using a 9-point scale where (-4) is the item which the student most disagrees with and (+4) is the item the student most agrees with. The statements categorized in the four domains of autonomy, competence, relatedness and task value were explored as to which provided the greatest intrinsic motivation to the learner. Data were entered and analyzed using the PQMethod – 2.35 package software maintained by Peter Schmolck.

## Results & Discussion

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Part of Q factor analysis included doing principal components factor analysis and varimax rotation which generated factor scores, factor characteristics, distinguishing statements and consensus statements. The respondents were classified into 3 clusters.

## Conclusions

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The acquiescent laggards agree to the use of ultrasound but lack confidence. They will benefit from peer mentoring. The confident adopters are at ease with the technology. They will appreciate more hands-on time. The ambivalent controllers need to maintain a sense of control. The technology is good but they are afraid to ask questions. These students may feel more comfortable if given web-based instructions which they can easily follow. In the analysis of the consensus statements, generally, the respondents are engaged collaborators, in keeping with the unique character of the 21<sup>st</sup> century learner, one who adopts teamwork.