

**Washington State University
College of Education**

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Will defend the thesis proposal

Wednesday, August 28, 2019

Time: 9:00 am

Location: Cleveland Hall 353

Faculty, students and the general public are encouraged to attend.

**APPLICATION OF COMPUTERIZED ADAPTIVE TESTING TO WASHINGTON
ASSESSMENT OF THE RISKS AND NEEDS OF STUDENTS (WARNS)**

Chair: Brian French

The Washington Assessment of the Risks and Needs of Students (WARNS) is a computer-based assessment created to help courts, schools, and youth service providers determine an adolescent's risks and needs that may lead to truancy, drop out, or delinquency from school. This assessment measures a single domain and six subdomains represented by a bi-factor model. For each subscale, risks and needs scores are calculated. Users are advised to consider the total score to make a decision about youth. Estimating an adolescence' total WARNS score with a smaller number of items may result in less respondent burden, less administration time, and more accurate outcomes. Computerized adaptive testing (CAT) can be an efficient way of administering an assessment with a smaller number of items. In CAT, items for each examinee are selected from an item pool based on the examinee's responses to the previously administered items. Item administration ceases as soon as the examinee's ability estimate reaches a predetermined precision level. Thus, each examinee, in theory, is offered the fewest possible items, that are most appropriate for that individual. CAT use in personality assessments is limited compared to achievement assessments, but can reduce the number of items required without sacrificing score accuracy. The purpose of this study is to examine applicability and efficiency of CAT for the WARNS. A simulation study will be conducted for this purpose, and the results are expected to demonstrate that CAT provides an accurate estimate of students' risks and needs scores on WARNS, yields higher or equal reliability estimates, and reduces the number of items administered for each examinee compared to the existing computer-based version.

Keywords: Personality assessment, computerized adaptive testing, short form, item response theory, polytomous item.