

## Concurrent estimation

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At the 3rd Rasch day I wrongly stated that Winsteps isn't appropriate for test equating using concurrent estimation. To clarify: concurrent estimation will not result in bias if you use CML estimation or specify different distributions for different populations in MMLE: Hanson & Beguin (2002) remarking on the study of Kim & Cohen (1998): Bilog was also used for concurrent estimation, although this is not strictly appropriate in the case in which the groups taking the two forms are not randomly equivalent, because BILOG cannot estimate the correct specified model in which separate latent variable distributions are assumed for the groups of examinees taking the two forms. Kolen and Brennan cite Mars (2000) on this for MMLE (p.167), but later they then state it again (p. 388), without evidence or citations or referring to the estimation method, which misled me into generalising. Winsteps by default uses JMLE, and doesn't support MMLE. Thank you to Anton Beguin for clearing this up for me. Hanson, B.A. & Béguin, A.A. (2002) Obtaining a Common Scale for Item Response Theory Item Parameters Using Separate Versus Concurrent Estimation in the Common-Item Equating Design. *Applied Psychological Measurement*, Vol. 26, No. 1, 3-24 Kolen, M.J. & Brennan, R.L. (2004) *Test Equating, Scaling and Linking* New York: Springer