**Example tools for Biology GTA TPD – MOST are in the Annotated Bibilography**

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| **Variable** | **Sub-variable** | **Specific variable and measures** |
| GTA Cognition | Knowledge | * Approaches to Teaching Inventory (ATI) (Gormally et al., 2016) * GTA knowledge survey (Appendix of Gormally et al. 2016) * GTA knowledge about teaching; PCK PRIME reflection template (Lampley 2015) * Teaching Science as Inquiry (Smolleck, Zembal-Saul, & Yoder, 2006) * Cognitive Learning Evaluation (CLE); Hughes and Ellefson, 2013 * Student Assessment of Learning Gains (SALG) * Peer Inquiry Observation Protocol (Miller et al., 2014) |
|  | Attitudes | * Motivation to teach (Kajfez and Matusovich, 2017) |
|  | Beliefs | * Teacher Beliefs Interview (Luft and Roehrig) * GTA Identity (Teacher Beliefs Interview Typology; Gormally 2016) * GTA beliefs about teaching and confidence in teaching (Wheeler et al., 2017) * STEM GTA-Teaching Self-Efficacy Scale ([DeChenne *et al*., 2012](https://www.lifescied.org/doi/10.1187/cbe.17-03-0044#B19)) * Anxiety and Confidence in Teaching Scale (Reeves et al., 2018) |
| GTA Practice | Planning | * Artifact analysis – e-mails, blogs, lesson plans |
|  | Teaching | * Teaching Assistant Inquiry Observation Protocol (TA-IOP) (Miller et al., 2014) * Reformed Teaching Observation Protocol (RTOP); Addy and Blanchard, 2010 * EQUIP observation protocol (Gormally et al., 2016) * COPUS (Smith et al., 2013) * Laboratory Observation Protocol for Undergraduate STEM (Velasco et al., 2016) |
|  | Assessing | * Artifact analysis of quizzes / exams |
| Impact (Undergraduate) | Knowledge | * Student Assessment of Learning Gains (SALG) * Student grades * Cognitive Learning Evaluation (CLE); Hughes and Ellefson, 2013 * Test of Scientific Literacy Skills (TOSLS); Gormally et al., 2012 |
|  | Retention | * Institutional educational records |
|  | Attitude | * Classroom Community Scale (CCS); Rovai, 2002 * Science Motivation Questionnaire II (SMQ-II); Glynn et al., 2011 |
|  | Student assessment of GTA teaching | * Student Evaluation of Educational Quality (SSEQ) (Hughes and Ellefson, 2013) * Perceptions of teaching techniques (Kendall et al., 2013b) * College and University Classroom Environment Inventory (CUCEI); Kendall and Schussler, 2012 * Questionnaire of Teacher Interaction (QTI); Kendall and Schussler, 2012 * Laboratory Course Assessment Survey (Corwin et al., 2015 |
|  | Student Behavior | * Teaching Assistant Inquiry Observation Protocol (TA-IOP) (Miller et al., 2014) * Laboratory Observation Protocol for Undergraduate STEM (Velasco et al., 2016) |