RESEARCH DATA SHARING AGREEMENT

for External Data Sharing

UTAH STATE BOARD OF EDUCATION

REQUEST TYPE (select one of the following):

x Student PII
☐ Student-level de-identified data
☐ Unmasked aggregate student data

PARTIES: This Research Sharing Agreement (**"Agreement"**) is between the **Utah State Board of Education**, referred to as **"State Entity"** or **"USBE"**, and the following primary **"Researcher"(s)**, each individually a **"Party"** and together the **"Parties"**.

Bo Bashkov, Ph.D.				LEGAL STATUS OF RESEARCHER	
Name of Researcher #1				Sole Proprietor	☐
IXL Learning, Inc.				Non-Profit Corporation	☐
Name of University, Organization, or Entity				For-Profit Corporation	x
777 Mariners Island Blvd, Suite 600				Partnership	☐
Address				Government Agency	☐
San Mateo	**CA**	**94404**	**www.ixl.com**		
City	State	Zip	Website		
bbashkov@ixl.com			**650-431-0738**		
Email			Phone		

Christina Schonberg, Ph.D.				LEGAL STATUS OF RESEARCHER	
Name of Researcher #2				Sole Proprietor	☐
IXL Learning, Inc.				Non-Profit Corporation	☐
Name of University, Organization, or Entity				For-Profit Corporation	x
777 Mariners Island Blvd, Suite 600				Partnership	☐
Address				Government Agency	☐
San Mateo	**CA**	**94404**	**www.ixl.com**		
City	State	Zip	Website		
cschonberg@ixl.com			**847-894-3855**		
Email			Phone		

This agreement is for consideration at the December 2025 Law and Licensing Committee of the Utah State Board of Education.

Contact: Katy Challis, Director of Privacy, katy.challis@schools.utah.gov

AGREEMENT PERIOD:

Effective Date: __**January 17, 2024**__

Termination Date: 2 years from effective , unless terminated early or extended in accordance with the terms and
date

conditions of this agreement.

Renewal Options, if any: 3 renewal options

ATTACHMENTS: Any conflicts between Attachment A and the other Attachments will be resolved in favor of Attachment A.
ATTACHMENT A: State of Utah Standard Terms and Conditions for Research
ATTACHMENT B: Scope of Research
ATTACHMENT C: Curriculum Vitae for external researcher(s)
ATTACHMENT D: Additional Scopes of Research if applicable

SIGNATURES OF APPROVAL:

Each signatory below represents that he or she has the requisite authority to enter into this Agreement.

IN WITNESS WHEREOF, the Parties sign and cause this Agreement to be executed.

IXL			Paul Mishkin	Chief Executive Officer, IXL Learning, Inc.
	Signature	Date	Name	Title
USBE			Sydnee Dickson, Ed.D	State Superintendent of Public Instruction
	Signature	Date	Name	Title

USBE CONTACT PERSON:	Name/Title:	Katy Challis, Director of Privacy, USBE
	Phone/email:	801-538-7894, katy.challis@schools.utah.gov

IXL CONTACT PERSON:	Name/Title:	Bo Bashkov, Ph.D., Senior Manager of Research
	Phone/email:	bbashkov@ixl.com

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1. **DEFINITIONS:** The following terms shall have the meanings set forth below:
   1.1. "**Authorized Persons**" means Researcher's employees, officers, partners, Subcontractors or other agents of Researcher who require access to Data and who have a legitimate educational interest in the education records to enable the Researcher to perform its responsibilities under this Agreement.
   1.2. "**Agreement Signature Page(s)**" means the State of Utah cover page(s) that the State Entity and Researcher signed.
   1.3. "**Data**" includes Student Personally Identifiable Information and Educator Data, and may also include Confidential Information.
   1.4. "**Data Steward**" means the entity responsible for combining two Data sets from different sources, and managing the resultant Data set. If a USBE Data system is being used, then USBE is the Data Steward. If another entity is doing the calculations or derivations, then that entity becomes the Data Steward.
   1.5. "**Destroy**" means to remove Data such that it is not maintained in retrievable form and cannot be retrieved in the normal course of business.
   1.6. "**Educator Data**" includes, but is not limited to, the educator's name; any unique identifier, including social security number; and other information that, alone or in combination, is linked or linkable to a specific educator.
   1.7. "**Incident**" means the potentially unauthorized access to Data that Researcher believes could reasonably result in the use, disclosure or theft of Data within the possession or control of Researcher or Researcher's Subcontractors.
   1.8. "**Metadata**" includes all information created manually or automatically to provide meaning or context to other data.
   1.9. "**State Entity**" means the department, division, office, bureau, agency, or other organization identified on the Agreement Signature Page(s).
   1.10. "**State of Utah**" means the State of Utah, in its entirety, including its institutions, agencies, departments, divisions, authorities, instrumentalities, boards, commissions, elected or appointed officers, employees, agents, and authorized volunteers.
   1.11. "**Student Personally Identifiable Information**" or "**PII**" has the same meaning as that found in U.C.A § 53E-9-301, and includes both direct identifiers (such as a student's or other family member's name, address, student number, or biometric number) and indirect identifiers (such as a student's date of birth, place of birth, or mother's maiden name). Indirect identifiers that constitute PII also include metadata or other information that, alone or in combination, is linked or linkable to a specific student that would allow a reasonable person in the school community, who does not have personal knowledge of the relevant circumstances, to identify the student with reasonable certainty.
   1.12. "**Subcontractors**" means any person or entity that will receive Data from Researcher shared as part of this agreement.
   1.13. "**Targeted Advertising**" means advertising to a student or a student's parent by Researcher if the advertisement is based on information or Data Researcher collected or received under this Agreement.
2. **GOVERNING LAW AND VENUE:** This Agreement shall be governed by the laws, rules, and regulations of the State of Utah. Any action or proceeding arising from this Agreement shall be brought in a court of competent jurisdiction in the State of Utah. Venue shall be in Salt Lake City, in the Third Judicial District Court for Salt Lake County.
3. **LAWS AND REGULATIONS:** At all times during this Agreement, Researcher and all research shall comply with all applicable federal and state constitutions, laws, rules, codes, orders, and regulations, including applicable licensure and certification requirements.
4. **RECORDS ADMINISTRATION:** Researcher shall maintain or supervise the maintenance of all records necessary to properly account for Researcher's performance under this Agreement. These records shall be retained by Researcher for at least six (6) years after termination of this Agreement, or until all audits initiated within the six (6) years have been completed, whichever is later. Researcher agrees to allow, at no additional cost, the State of Utah, federal auditors, State Entity staff, or their designees, access to all such records during normal business hours and to allow interviews of any employees or others who might reasonably have information related to such records. Further, Researcher agrees to include a similar right of the State to audit records and interview staff in any subcontract related to performance of this Agreement.
5. **CONFLICT OF INTEREST:** Researcher represents that none of its officers or employees are officers or employees of the State Entity or the State of Utah, unless disclosure has been made to the State Entity.
6. **INDEPENDENT CONTRACTOR:** Researcher and Subcontractors, in the performance of this Agreement, shall act in an independent capacity and not as officers or employees or agents of USBE.
7. **NON-FINANCIAL UNDERSTANDING:**

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7.1. This Agreement is a non-financial understanding between USBE and Researcher. No financial obligation by or on behalf of either of the Parties is implied by a Party's signature at the end of this Agreement.

7.2. The terms of any financial liability that arises from Data processing activities carried out in support of the responsibilities covered herein must be negotiated separately and to the mutual satisfaction of the Parties.

7.3. The legal authority for Data sharing for specified purposes conveyed by this Agreement cannot be used to support a subsequent claim of implied agreement to financial obligation.

8. **COST (OPTIONAL):** Researcher agrees to pay fees in the amount of $ for the preparation or delivery of the research Data (this payment may be required in advance). Payment shall be made to:

9. **RESEARCHER RESPONSIBILITY:** Researcher is solely responsible for fulfilling the Agreement. Researcher shall be the sole point of contact regarding all contractual matters. Researcher must incorporate Researcher's responsibilities under this Agreement into every subcontract with its Subcontractors. Moreover, Researcher is responsible for its Subcontractors compliance under this Agreement.

10. **INDEMNITY:** Researcher shall be fully liable for the actions of its agents, employees, officers, partners, and Subcontractors, and shall fully indemnify, defend, and save harmless the State Entity and the State of Utah from all claims, losses, suits, actions, damages, and costs of every name and description, including but not limited to any loss of Data and claims arising out of any data breach, arising out of Researcher's performance of this Agreement caused by any intentional act or negligence of Researcher, its agents, employees, officers, partners, or Subcontractors, without limitation; provided, however, that the Researcher shall not indemnify for that portion of any claim, loss, or damage arising hereunder due to the sole fault of the State Entity. The parties agree that if there are any limitations of the Researcher's liability, including a limitation of liability clause for anyone for whom the Researcher is responsible, such limitations of liability will not apply to injuries to persons, including death, or to damages to property.

11. **EMPLOYMENT PRACTICES:** Researcher agrees to abide by any other laws, regulations, or orders that prohibit the discrimination of any kind by any of Researcher's employees.

12. **AMENDMENTS:** This Agreement may only be amended by the mutual written agreement of the Parties, which amendment will be attached to this Agreement. Automatic renewals will not apply to this Agreement, even if identified elsewhere in this Agreement.

13. **DEBARMENT:** Researcher certifies that it is not presently nor has ever been debarred, suspended, proposed for debarment, or declared ineligible by any governmental department or agency, whether international, national, state, or local. Researcher must notify the State Entity within thirty (30) days if debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in any contract by any governmental entity during this Agreement.

14. **TERMINATION:** This Agreement may be terminated, with cause by either Party, in advance of the specified expiration date, upon written notice given by the other Party. The Party in violation will be given ten (10) days after written notification to correct and cease the violations, after which this Agreement may be terminated for cause immediately and subject to the remedies below. This Agreement may also be terminated without cause (for convenience), in advance of the specified expiration date, by the State Entity, upon thirty (30) days written termination notice being given to the Researcher. The Parties may terminate this Agreement, in whole or in part, at any time, by mutual agreement in writing.

14.1. Following the termination of this Contract, USBE reserves the right to request a complete and secure (i.e. encrypted and appropriately authenticated) download file of all data, including, but not limited to, all Data, schema and transformation definitions, or delimited text files with documented, detailed schema definitions along with attachments in its native format. After USBE has been provided and confirmed as acceptable a complete download, or declines a download and requests immediate destruction, Contactor shall Destroy all Data collected, generated, or inferred as a result of this Contract. Should USBE not request a complete download, Contractor shall Destroy the Data immediately after thirty (30) days post termination of the Contract. The Contractor shall notify USBE in writing of the date upon which all of the Data is destroyed.

15. **CHANGES IN LAW:** Upon thirty (30) days written notice delivered to the Researcher, this Agreement may be terminated in whole or in part at the sole discretion of the State Entity, if the State Entity reasonably determines that a change in Federal or State legislation or applicable laws materially affects the ability of either Party to perform under the terms of this Agreement.

16. **RESERVED.**

17. **PUBLIC INFORMATION:** Researcher agrees that this Agreement shall be a public document and may be available for public and private distribution in accordance with the State of Utah's Government Records Access and Management Act (GRAMA). Researcher gives the State Entity and the State of Utah express permission to make copies of this Agreement in accordance with GRAMA. The State Entity and the State of Utah are not obligated to inform Researcher of any GRAMA requests for

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disclosure of this Agreement.

18. **INDEMNIFICATION RELATING TO INTELLECTUAL PROPERTY:** Researcher will indemnify and hold the State Entity and the State of Utah harmless from and against any and all damages, expenses (including reasonable attorneys' fees), claims, judgments, liabilities, and costs in any action or claim brought against the State Entity or the State of Utah for infringement of a third party's copyright, trademark, trade secret, or other proprietary right. The Parties agree that if there are any limitations of Researcher's liability, such limitations of liability will not apply to this section.

19. **OWNERSHIP IN INTELLECTUAL PROPERTY:** The State Entity and Researcher each recognizes that each has no right, title, or interest, proprietary or otherwise, in the intellectual property owned or licensed by the other, unless otherwise agreed upon by the Parties in writing.

20. **ASSIGNMENT:** Researcher may not assign, sell, transfer, subcontract or sublet rights, or delegate any right or obligation under this Agreement, in whole or in part, without the prior written approval of the State Entity.

21. **REMEDIES:** Any of the following events will constitute cause for the State Entity to declare Researcher in default of this Agreement: (i) Researcher's non-performance of its contractual requirements and obligations under this Agreement; or (ii) Researcher's material breach of any term or condition of this Agreement. The State Entity may issue a written notice of default providing a ten (10) day period in which Researcher will have an opportunity to cure. Time allowed for cure will not diminish or eliminate Researcher's liability for damages. If the default remains after Researcher has been provided the opportunity to cure, the State Entity may do one or more of the following: (i) exercise any remedy provided by law or equity; (ii) terminate this Agreement; (iii) impose liquidated damages, if liquidated damages are listed in this Agreement; (iv) debar/suspend Researcher from receiving future contracts from the State Entity or the State of Utah.

22. **FORCE MAJEURE:** Neither Party to this Agreement will be held responsible for delay or default caused by fire, riot, act of God, and/or war which is beyond that Party's reasonable control. The State Entity may terminate this Agreement after determining such delay will prevent successful performance of this Agreement.

23. **PUBLICITY:** Researcher shall submit to the State Entity for written approval all advertising and publicity matters relating to this Agreement. It is within the State Entity's sole discretion whether to provide approval, which approval must be in writing.

24. **INSURANCE:**
    24.1. Researcher shall obtain and maintain, and ensure that each Subcontractor shall obtain and maintain, at a minimum, insurance as specified in this section at all times during the term of this Contract. All insurance policies required by this Agreement shall be issued by insurance companies with an AM Best rating of A-VIII or better.
    24.2. Researcher shall maintain Protected Information Liability insurance covering all loss of Data and claims based on alleged violations of privacy rights through improper use or disclosure of protected information with minimum limits of $1,000,000 each occurrence and $2,000,000 general aggregate.
    24.3. USBE shall be named as additional insured on all commercial general liability policies required of Researcher and Subcontractors. Coverage required of Researcher and each Subcontractor shall be primary over any insurance or self-insurance program carried by Researcher or USBE.
    24.4. The above insurance policies shall include provisions preventing cancellation or non-renewal, except for cancellation based on non-payment of premiums, without at least 30 days prior notice to Researcher. Researcher shall forward such notice to the USBE's contact as listed in the Agreement within 15 days of Researcher's receipt of such notice.
    24.5. All insurance policies secured or maintained by Researcher or its Subcontractors in relation to this Agreement shall include clauses stating that each carrier shall waive all rights of recovery under subrogation or otherwise against Researcher or USBE, its agencies, institutions, organizations, officers, agents, employees, and volunteers.
    24.6. Researcher shall provide to USBE certificates evidencing Researcher's insurance coverage required in this Agreement within 30 Business Days following the Effective Date. Researcher shall provide to USBE certificates evidencing Subcontractor insurance coverage required under this Agreement within 30 Business Days following the Effective Date, except that, if Researcher's subcontract is not in effect as of the Effective Date, Researcher shall provide to USBE certificates showing Subcontractor insurance coverage required under this Agreement within 7 Business Days following Researcher's execution of the subcontract. No later than 3 days before the expiration date of Researcher's or any Subcontractor's coverage, Researcher shall deliver to USBE certificates of insurance evidencing renewals of coverage. At any other time during the term of this Agreement, upon request by USBE, Researcher shall, within 7 Days following the request by USBE, supply to USBE evidence satisfactory to USBE of compliance with the provisions of this section.
    24.7. The State reserves the right to require higher or lower insurance limits where warranted. Failure to provide proof of insurance as required will be deemed a material breach of this Contract. Researcher's failure to maintain this insurance requirement for the term of this Agreement will be grounds for immediate termination of this Agreement.

25. **WORK ON STATE OF UTAH OR ELIGIBLE USER PREMISES**: Researcher shall ensure that personnel working on State of Utah premises shall: (i) abide by all of the rules, regulations, and policies of the premises; (ii) remain in authorized areas; (iii) follow all instructions; and (iv) be subject to a background check, prior to entering the premises. The State of Utah or Eligible User may remove any individual for a violation hereunder.

26. **WAIVER:** A waiver of any right, power, or privilege shall not be construed as a waiver of any subsequent right, power, or privilege.

27. **SUSPENSION OF WORK:** Should circumstances arise which would cause the State Entity to suspend Researcher s responsibilities under this Agreement, but not terminate this Agreement, this will be done by formal written notice pursuant to the terms of this Agreement. Researcher's responsibilities may be reinstated upon advance formal written notice from the State Entity.

28. **CHANGES IN SCOPE**: Any changes in the scope of the services to be performed under this Agreement shall be in the form of a written amendment to this Agreement, mutually agreed to and signed by both Parties, specifying any such changes, fee adjustments, any adjustment in time of performance, or any other significant factors arising from the changes in the scope of services.

29. **DISPUTE RESOLUTION:** Prior to either Party filing a judicial proceeding, the Parties agree to participate in the mediation of any dispute. The State Entity, after consultation with Researcher, may appoint an expert or panel of experts to assist in the resolution of a dispute. If the State Entity appoints such an expert or panel, State Entity and Researcher agree to cooperate in good faith in providing information and documents to the expert or panel in an effort to resolve the dispute.

30. **ORDER OF PRECEDENCE:** In the event of any conflict in the terms and conditions in this Agreement, the order of precedence shall be: (i) this Attachment A; (ii) Attachment B; (iii) Agreement Signature Page(s); (iv) the State of Utah's additional terms and conditions, if any; (v) any other attachment listed on the Agreement Signature Page(s); and (vi) Researcher's terms and conditions that are attached to this Agreement, if any. Any provision attempting to limit the liability of Researcher or limit the rights of the State Entity or the State of Utah must be in writing and attached to this Agreement or it is rendered null and void.

31. **SURVIVAL OF TERMS:** Any terms that by their nature would survive the expiration of, completion, or termination of this Agreement shall survive.

32. **SEVERABILITY:** The invalidity or unenforceability of any provision, term, or condition of this Agreement shall not affect the validity or enforceability of any other provision, term, or condition of this Agreement, which shall remain in full force and effect.

33. **ERRORS AND OMISSIONS:** Researcher shall not take advantage of any errors and/or omissions in this Agreement. Researcher must promptly notify USBE of any errors and/or omissions that are discovered.

34. **ENTIRE AGREEMENT:** This Agreement constitutes the entire agreement between the Parties and supersedes any and all other prior and contemporaneous agreements and understandings between the Parties, whether oral or written.

35. **CONFIDENTIALITY GENERAL PROVISIONS:**
    35.1. This Agreement applies to all Data sharing between Researcher and USBE. Specific Data to be shared are outlined in the Attachments, along with the purpose of Data sharing, Data ownership and conditions and/or regulations governing the usage of the shared Data, requirements for shared data retention/destruction, and Party processes for implementing these actions.
    35.2. USBE and Researcher enter into this Agreement to share and exchange Data for the purposes of conducting studies for, or on behalf of, educational agencies or institutions to develop, validate, or administer predictive tests; administer student aid programs; or improve instruction.
    35.3. This Agreement will be reviewed, updated, and approved on an annual basis.
    35.4. USBE reserves all right, title, and interest, including all intellectual property and proprietary rights, in and to system data, Data, and all related data and content.
    35.5. Researcher, as USBE's agent, shall comply with all applicable laws and regulations including but not limited to FERPA, the Utah Family Education Rights and Privacy Act, Utah Code § 53E-9-2 ("UFERPA"), and the Individuals with Disabilities Educational Act, 30 U.S.C. §1400 et seq. and 34 C.F.R. Part 300 ("IDEA").
    35.6. Any terms that by their nature would survive the expiration of, completion, or termination of this Agreement shall survive.
    35.7. Researcher shall, upon written request, permit USBE or its designated representatives to perform an assessment, audit, examination, or review of all of Researcher's sites and environments in order to confirm Researcher's compliance with this Contract; associated Researchers or Scopes of Work; and applicable laws and regulations.

35.8. During the term of this Contract, if USBE requests the Destruction of PII collected, generated or inferred as a result of this Contract, Researcher shall Destroy the information within five (5) calendar days after the date of the request. Researcher shall provide USBE with written confirmation of the date the data was Destroyed.

35.9. USBE retains the right to use the established operational services to access and retrieve Data stored on Researcher's infrastructure at its sole discretion.

36. DATA ACCURACY:

36.1. The Data provided are the best and most complete documentation available. USBE does not ensure 100% accuracy of all records and fields. Some data fields, including those that are not used, may contain incorrect or incomplete Data. USBE and Researcher will report any systematic problems with the Data to the data owner. Data that has been manipulated or re-processed by either USBE or Researcher is the responsibility of that Party.

37. ACCESS TO DATA:

37.1. Researcher shall limit access to Data to Authorized Persons only and shall require a non-disclosure agreement be signed by all Authorized Persons prior to being granted access to Data.

37.2. Researcher shall maintain past and current lists of all Authorized Persons, maintain each non-disclosure agreement, and shall permit inspection of the same by USBE upon request.

37.3. Researcher shall maintain an audit trail for the duration of this Agreement, which reflects the granting and revoking of access privileges to Authorized Persons. A copy of this audit trail may be requested by USBE from Researcher at any time and shall be provided within 10 days of the USBE request.

37.4. Researcher shall have strong access controls in place. Researcher shall disable and/or immediately delete unused and terminated Authorized Persons' accounts and shall periodically assess account inactivity for potential stale accounts.

37.5. Researcher shall provide annual, mandatory privacy and security awareness and training for all Authorized Persons, maintain past and current lists of Authorized Persons that have completed training, and permit inspection of the same by USBE upon request.

38. USE AND DISCLOSURE OF DATA:

38.1. Researcher shall not collect, use, or share Data beyond the purposes set forth in the Attachments.

38.2. Researcher shall share Data only for the purposes stated in the Attachments and then only with the Authorized Persons stated in the Attachments.

38.3. If Researcher seeks to publicly release Data, Researcher must aggregate the Data by totaling the Data and reporting it at the group, cohort, school, school district, region, or state level. Researcher shall, upon request of USBE, provide USBE with a document that lists the steps and methods the Researcher shall use to de-identify the information. Any Data that is publicly released without being redacted using the methods in this Section shall be considered an Incident. The following methods shall be used on any aggregated reports:

38.3.1. Aggregate data shall be reported publicly only if there is a sufficient number of individuals represented in any demographic or subgroup so that an individual cannot be identified.

38.3.2. Aggregated reports shall redacted using complementary suppression methods that remove the risk of Data being identifiable using simple mathematics or formulas.

38.3.3. Aggregated reports shall be redacted to remove identifiability risks caused other prior releases of aggregate data by Researcher.

38.4. Researcher shall not use Data for the purposes of Targeted Advertising.

38.5. Researcher shall not sell or otherwise monetize Data except Data transferred through the purchase of, merger with, or otherwise acquisition of Researcher provided that all Parties remain in compliance with this Agreement.

39. DATA LINKAGE:

39.1. If Researcher will link USBE's Data with Data from another source, the result could be a new data set with potentially unique regulations and conditions governing its use. Prior to linking the Data, Researcher will provide detailed information to USBE outlining the Data being linked and the other sources for Data.

39.2. The Data Steward will classify the linked data based on security or privacy risks. This could include evaluating the method of release, on the likelihood of identifying individuals from the linked Data, if linking the Data will violate any laws or regulations, or if the new data set meets the original request.

39.3. Based on the results of the risk assessment, USBE may refuse to provide Researcher with some or all of the requested Data in its sole discretion in order to mitigate any risks identified.

39.4. Should USBE consent to the Data being linked, the Data Steward shall apply additional constraints as necessary to the usage of the new data set.

39.5. Detailed information on the Data being linked, the other sources of Data, and any additional constraints shall be documented in the Attachments.

40. SECURITY AND PROTECTION OF DATA:

40.1. Researcher shall notify USBE if there are any material changes that will negatively affect the system where all Data are stored and maintained.

40.2. If Researcher is given Data as part of this Agreement, the protection of Data shall be an integral part of the business activities of Researcher to ensure that there is no inappropriate or unauthorized use of Data. Researcher shall safeguard the confidentiality, integrity, and availability of Data.

40.3. Researcher shall comply with and protect and maintain Data in accordance with an industry-accepted cybersecurity framework, such as the National Institute of Standards and Technology (NIST) Cybersecurity Framework or the Center for Internet Safety (CIS) Controls..

40.4. Researcher shall only transmit or exchange Data via secure means (ex. HTTPS or FTPS). Researcher shall not use, store or process Data on any unencrypted portable or laptop computing device or any portable storage medium.

40.5. Researcher shall store and maintain all Data in data centers located in the United States.

40.6. Researcher shall permit its employees and Subcontractors to access Data remotely only via a secured manner, such as Virtual Private Networks (VPN).

40.7. Researcher shall store all Data, as well as any backups made of that Data, in encrypted form using no less than 128 bit key and include all Data as part of a designated backup and recovery process.

40.8. Researcher shall enforce strong password protections on all devices and networks with access to or that store Data.

40.9. Researcher shall maintain data only until such time that the data is no longer needed (Term Expiration) or upon early termination of this Agreement (with Cause), whichever occurs first. At that point, the data will be destroyed within 30 days by the party holding the data, except for disclosed information possessed by any court. Researcher shall certify to USBE in writing that the data has been destroyed.

41. INCIDENTS:

41.1. If Researcher becomes aware of an Incident involving Data by either Researcher or any of Researcher's Subcontractors, Researcher shall notify USBE within one (1) calendar day and cooperate with USBE regarding recovery, remediation, and the necessity to involve law enforcement, if any.

41.2. Researcher shall produce a written remediation plan that includes information about the cause and extent of the Incident and the actions Researcher will take to remediate the Incident and to reduce the risk of incurring a similar type of Incident in the future. Researcher shall present its analysis and remediation plan to USBE within ten (10) calendar days of notifying USBE of an Incident. USBE reserves the right to adjust this plan, in its sole discretion. If Researcher cannot produce its analysis and plan within the allotted time, USBE, in its sole discretion, may perform such analysis and produce a remediation plan, and Researcher shall reimburse USBE for the reasonable costs thereof.

41.3. In the event of an Incident, Researcher shall provide USBE or its designated representatives with access seven (7) days a week, twenty-four (24) hours a day, for the purpose of evaluating, mitigating, or resolving the Incident.

41.4. Unless Researcher can establish that Researcher or any of its Subcontractors is not the cause or source of the Incident, Researcher shall be responsible for the cost of notifying each person whose personal information may have been compromised by the Incident.

41.5. Disclosure of Data by Researcher or any Subcontractor for any reason may be cause for legal action by third parties against Researcher, the State, or their respective agents. Researcher shall indemnify, save, and hold harmless the State, its employees, and agents against any and all claims, damages, liability, and court awards including costs, expenses, and attorney fees incurred as a result of any act or omission by Researcher, or its employees, agents, Subcontractors, or assignees pursuant to this Contract. Notwithstanding any other provision of this Contract, Researcher shall be liable to the State for all direct, consequential and incidental damages arising from an Incident caused by Researcher or its Subcontractors.

RESEARCH OVERVIEW:

PROJECT TITLE:

State the title of the study.

IXL Efficacy and Validity Study

PURPOSE OF STUDY:

Provide a description of the study, including the reason the data is needed.

Background:

IXL Learning is an educational technology company that offers supplemental e-learning tools (e.g., IXL) for PreK-12 students and teachers. IXL is an adaptive personalized learning platform offered in English language arts (ELA), mathematics, science, social studies, and Spanish. IXL is used by more than 1 million teachers and 15 million students worldwide.

IXL Learning's programs are built on four research-based components described by Bashkov, Mattison, & Hochstein, 2021: (1) a comprehensive curriculum of over 17,000 skills and associated questions and tasks, developed by a team of curriculum specialists and aligned with Common Core and other state standards; (2) IXL's Real-Time Diagnostic: an adaptive interim assessment designed to provide students, teachers, and administrators with current grade-level proficiency levels on key math and ELA strands; (3) personalized guidance in the form of individualized next-step recommendations from the diagnostic and skill practice; and (4) analytics in the form of reports for students, teachers, and administrators detailing student learning activity and progress for schools, classes, groups of students, and individuals to inform and differentiate instruction.

A core component of IXL is the IXL Real-Time Diagnostic, an interim assessment that delivers up-to-date insights on students' knowledge levels in ELA and math. Analyzing student response patterns via item response theory (Lord, 1980), the diagnostic creates personalized learning plans, helping every learner achieve more. Many studies have examined the psychometric properties of the IXL Real-Time Diagnostic and have garnered desirable reliability and validity evidence, including coherent internal structure (IXL Learning, 2020a), multi-group measurement invariance (An et al., 2022), high reliability (IXL Learning, 2020a; Hargis, 2023; Schonberg, 2021), and strong predictive validity coefficients using multiple well-established assessments as criterion measures (An, 2021, 2022a, 2022b, 2022c; Hargis, 2022, 2023; IXL Learning, 2020b; Schonberg, 2021, 2022, 2023a, 2023b, 2023c).[1]

Purpose:

The purpose of the proposed research is twofold. First, we aim to examine the efficacy of IXL by studying the impact of IXL usage on students' state math assessment outcomes (i.e., Acadience, RISE, Utah Aspire Plus, and/or ACT). In a previous research partnership, the Utah Education Policy Center (UEPC) studied associations between IXL Math usage and student RISE performance in ten schools and found that students who used IXL for at least 20 minutes per week performed better on the RISE math assessment than students who did not use IXL (Altermatt et al., 2022). While this work is much appreciated and the UEPC plans to conduct additional research as part of the STEM Action Center's math personalized learning grant, the final report of this work is expected no sooner than summer 2025. Now, we seek to extend their findings by

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incorporating elementary, middle, and high school state assessment data from districts across the state to provide additional evidence of IXL's efficacy and make results available to district administrators and educators sooner.

Second, we aim to examine the predictive validity of IXL's assessments (e.g., the Real-Time Diagnostic) in math using Utah's state assessments (Acadience, RISE, Utah Aspire Plus, and/or ACT) as criterion measures. Finding a strong correlation between performance on IXL's assessments and Utah's state assessments would provide further evidence that IXL's assessments are a valid measure of student grade-level proficiency and provide educators with essential knowledge about students' knowledge levels and learning gaps well before end-of-year or end-of course assessments.

[1] Research reports are available at
https://www.ixl.com/membership/teachers/research

DURATION:

Enter the estimated end date of the study.   4 months from receipt of requested data

ADDITIONAL INFORMATION:

RESEARCH QUESTIONS:

List your research questions.

In the efficacy study, we aim to answer the following research questions (for each state assessment separately, conditional on sample size):

RQ1: What is the effect of IXL on students' math achievement, as measured by the Spring 2024 Utah state assessments?

RQ2: Are higher levels of IXL usage associated with higher student math achievement?

RQ3: (*conditional on sample size*) To what extent do these associations vary for students with different characteristics? (e.g., race/ethnicity groups, ELL students)

In the validity study, we aim to answer the following research questions (for each state assessment separately, conditional on sample size):

RQ4: How strong are the correlations between students' IXL assessment (e.g., Real-Time Diagnostic) scores and their state assessment (e.g., RISE) scores in math?

RQ5: What is the degree of alignment in classification of students into proficiency levels based on IXL's assessments and the Utah state assessments in math?

RQ6: (*conditional on sample size*) What is the correspondence between students' score ranges on IXL's assessments and their likelihood of achieving proficiency on the state assessments?

VARIABLES OF INTEREST:

List specific variables.

We would like to request the following student-level data from USBE (specific variables listed in "Data" section below):

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Student Record (S1), 2023-24 school year, all students: enrollment, demographic, and Acadience early numeracy results (where applicable)

Transcript Assessments (TA), 2023-24 school year, high school students: ACT Math scores

Spring 2023 and Spring 2024 RISE/Utah Aspire Plus scores and proficiency levels: from students who were in grades 3-10 during the 2022-23 and/or 2023-24 school years

DATA LINKAGE:

Provide detailed information on the Data being linked, the other sources of Data, and any additional constraints to protect the linked Data.

Data provided by USBE will be linked with a dataset obtained from IXL's internal database that details each student's IXL usage and diagnostic scores during the study period. This linkage is critical to achieving the aims of the proposed research. After the dataset from USBE has been linked with the dataset from IXL's internal database (using student name as the linking variable common to both datasets), all PII (such as names and IDs) will be removed from the resultant dataset. This combined dataset will distinguish records via computer-generated identifiers that are present only in this dataset.

ANALYTIC APPROACH:

Describe analysis.

The efficacy study (RQs 1-3) will use a quasi-experimental or correlational design to examine student performance during the 2023-24 school year. To evaluate the effect of IXL, we will examine the relationship between various IXL usage indicators (e.g., time spent on IXL, number of questions answered) and math achievement, as measured by the Spring 2024 [MOU1] Utah state assessments. We will use multilevel regression models to account for the clustering of students within schools and schools within districts, and each assessment (e.g., Acadience, RISE, ACT) will be modeled separately. Following WWC (2022) guidelines, in these models we will control for baseline performance by including Spring 2023 or Fall 2023 assessment performance as a covariate, and we will include demographic covariates as well. Contingent on sufficient sample size, we will also examine the extent to which the effect of IXL differs among subgroups of the student population (e.g., race/ethnicity groups, ELLs).

The validity study (RQs 4-6) will use correlation, chi-square tests of association, and logistic regression, modeling demographics where feasible and applicable. Specifically, using IXL assessment data from one or more time points throughout the school year and end-of-year state assessment scores, the study will assess the predictive validity of the Diagnostic via correlations between students' IXL assessment scores and students' state assessment scores, with correlations above .70 considered strong. Pending sufficient sample size, separate analyses will be conducted for each of Utah's state assessments.

We will also examine the classification alignment between the IXL assessments and the Utah state assessments with respect to students' grade-level proficiency in math. A chi-square test of association will be conducted to assess this alignment overall. In addition, we will compute a percentage agreement of classifications from the two assessments being compared. That is, are the majority of students classified as at/above

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grade level by the IXL assessment also classified as at/above grade level by the state assessment? Is there a similarly high alignment in classification for below-grade-level students as well?

Finally, sample size allowing, we will use logistic regression to estimate the probability of demonstrating proficiency on Utah's state assessments across score ranges on IXL's assessments for each grade. This information would provide Utah schools and districts using IXL's Diagnostic critical information about students' current proficiency levels and target growth throughout the semester or the school year in order to have a higher likelihood of demonstrating proficiency on the end-of-year state assessment.

OUTPUT:
Researchers must provide their output to the USBE.

OUTPUT DESCRIPTION:

Provide a summary of the output. This section states what reports or information will be produced because of this research and where that information will go.

Findings from the proposed research study will be published on the IXL research page, shared with USBE, and shared with Utah schools and districts upon request. This report will provide specific recommendations to Utah educators about how to implement IXL most effectively to support student learning as well as achievement on Utah's state assessments. Findings will be reported in aggregate, with appropriate data suppression techniques used in instances where small sample size could make it possible to identify an individual.

OUTPUT DELIVERY DATE:

State the date when the output will be provided to USBE.

The first report will be delivered 4 months after receipt of requested data.

DATA:

DATA REQUESTED:

List the data requested. Add additional rows as needed.

Data (Data and other information requested)
Student Record (S1), 2023-2024 school year, all students:
LEA name
LEA number
School name
School number
Student first, middle, and last name
Student grade level
Demographics: sex, ethnicity (Hispanic/Latino), economically disadvantaged marker (e.g., eligible for free or reduced-price lunch), student SPED marker (e.g., 504 services), ELL marker (e.g., limited English)
Acadience early numeracy status: BOY, MOY, EOY
Transcript Assessments (TA), 2023-2024 school year, high school students:
Student number
ACT Math test date
ACT Math test score
LEA number
School number
RISE (grades 3-8 during the school years listed below) / Utah Aspire Plus (grades 9-10 during the school years listed below) scores and proficiency levels:
LEA number (2023-24)
School number (2023-24)
Student number
2022-2023 RISE/Utah Aspire Plus Math scale score
2022-2023 RISE/Utah Aspire Plus Math proficiency level
2023-2024 RISE/Utah Aspire Plus Math scale score
2023-2024 RISE/Utah Aspire Plus Math proficiency level

DELIVERY:

Desired delivery date: February 1, 2024

Delivery method:
X Data will be compiled by USBE and sent securely to Researcher.
☐ Researcher will conduct on-premise research.
☐ Other (explain): _____

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ROLES:

		Name	Title
IXL	Data Steward:	Bo Bashkov	Senior Manager of Research
	Authorized Persons:	Christina Schonberg	Senior Research Scientist
		Xiaozhu An	Senior Research Scientist
		Mary Hargis	Senior Research Scientist
		Huan Liu	Research Scientist
USBE	Data Steward:		
	Data Quality Manager:	Aaron Brough	Director of Data and Statistics

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ATTACHMENT C
CURRICULUM VITAE

_____

Christina C. Schonberg
Curriculum vitae

Contact: cschonberg@ixl.com

EMPLOYMENT

2023-present	Senior Research Scientist
2021-2023	Research Scientist
	IXL Learning

2020-2021,	Postdoctoral Research Associate
2018-2019	NIH R21 HD092867-01 to Haley Vlach and Gary Lupyan
	University of Wisconsin-Madison

2019-2020	Postdoctoral Trainee
	NIH 5T32DC005359-14 to Susan Ellis-Weismer
	Mentors: Haley Vlach and Gary Lupyan
	University of Wisconsin-Madison

EDUCATION

2018	UCLA, Los Angeles, CA
	Ph.D., Developmental Psychology; Minor in Cognitive Psychology
	Advisors: Catherine Sandhofer & Scott P. Johnson
	Dissertation Title: *Language Experience and Toddlers' Socially-Cued Word Learning*

2013	UCLA, Los Angeles, CA
	M.A., Developmental Psychology

2011	Northwestern University, Evanston, IL
	B.A. (cum laude), Psychology (with Departmental Honors)
	Honors Thesis: *The Influence of a Foreign Language on Category Formation in 8- and 12-Month-Old Infants*

AWARDS AND HONORS

2021	NSF SBE Postdoctoral Fellowship ($138,000; declined)
2019	Cognitive Development Society Open Science Preconference Travel Award
2017	Cognitive Development Society Diversity Travel Award
2017	Shepard Ivory Franz Distinguished Teaching Assistant Award, UCLA
2015	Cognitive Development Society Diversity Travel Award
2015	PHFE WIC Summer Data Mining Fellowship
2013, 2014	Graduate Summer Research Mentorship, UCLA
2013	Lambda Alumni Scholarship, UCLA
2012	Distinguished University Fellowship, UCLA

PEER-REVIEWED PUBLICATIONS

Knabe, M. L., **Schonberg, C.**, & Vlach, H. A. (2023). When time shifts the boundaries: Isolating the role of forgetting in children's changing category representations. *Journal of Memory and Language*, *132*, 104447.

Knabe, M. L., **Schonberg, C.**, & Vlach, H. A. (2023). Does the public know what researchers know? Perceived task difficulty impacts adults' intuitions about children's early word learning. *Cognitive Research: Principles and Implications*, *8*(1), 45.

AuBuchon, A. M., Elliott, E. M., Morey, C. C., Jarrold, C., Cowan, N., Adams, E. J., ...**Schonberg, C.**, … & Voracek, M. (2022). Lexical access speed and the development of phonological recoding during immediate serial recall. *Journal of Cognition and Development*, *23*(5), 624-643.

Suffill, E., **Schonberg, C.**, Vlach, H. A., & Lupyan, G. (2022). Children's knowledge of superordinate words predicts subsequent inductive reasoning. *Journal of Experimental Child Psychology*, *221*, 105449.

Rochanavibhata, S., Atagi, N., **Schonberg, C.**, & Sandhofer, C. M. (2022). The role of syntactic cues in monolingual and bilingual two-year-olds' novel word disambiguation. *Infant Behavior and Development*, *68*, 101753.

Elliott, E. M., Morey, C. C., AuBuchon, A. M., Adams, E., Attwood, M., Bayram, B., Beeler-Duden, S., Blakstvedt, T. Y., Büttner, G., Castelain, T., Cave, S., Cowan, N., Crepaldi, D., Fredriksen, E., Glass, B., Graves, A., Guitard, D., Hoehl, S., …**Schonberg, C.**, … Voracek, M. (2021). Multi-lab direct replication of Flavell, Beach and Chinsky (1966): Spontaneous Verbal Rehearsal in a Memory Task as a Function of Age. *Advances in Methods and Practices in Psychological Science 4*(2), https://doi.org/10.1177/25152459211018187. Materials available at https://osf.io/pn4rk/

Zettersten, M., **Schonberg, C.**, & Lupyan, G. L. (2020). What does a radical exemplar view not predict? A commentary on Ambridge (2020). *First Language 40*(5-6)*, 636-639.

Schonberg, C., Russell, E. E., & Luna, M. L. (2020). Effects of past language experience and present language context on the shape bias in Spanish-English bilingual children. *Developmental Science 23*(2), e12879.

Sandhofer, C. M., & **Schonberg, C.** (2020). Multiple examples support children's word learning: The roles of aggregation, decontextualization, and memory dynamics. In J. Childers (Ed.), *Language and Concept Acquisition from Infancy Through Childhood: Learning from Multiple Exemplars*. New York: Springer Publishing.

Schonberg, C., Marcus, G., & Johnson, S. P. (2018). The roles of item repetition and position in infant sequence learning. *Infant Behavior and Development (53)*, 64-80.

Schonberg, C., Atagi, N., & Sandhofer, C. M. (2018). Two-year-olds' executive functioning: The influence of task-specific vocabulary knowledge. *Infant Behavior and Development (53)*, 33-42.

Schonberg, C.[†], Goodale, B. M.[†], & Doerfel, M. K. (2018). Predicting preschool enrollment among Hispanic WIC participants in Los Angeles County. *Child and Adolescent Social Work Journal 36*(2), 125-135. (note: [†] denotes equal contributions)

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Schonberg, C., Marcus, G., & Johnson, S. P. (2017). The roles of item repetition and position in infant sequence learning. In G. Gunzelmann, A. Howes, & E. J. Davelaar (Eds.), *Proceedings of the 39th Annual Conference of the Cognitive Science Society* (pp.3089-3094). Austin, TX: Cognitive Science Society.

Sandhofer, C. M., Atagi, N., **Schonberg, C.**, & Slone, L. K. (2016). Developmental Psychology (Cognitive). In D. Dunn (Ed.), *Oxford Bibliographies in Psychology.* New York: Oxford University Press.

Schonberg, C., Sandhofer, C. M., Tsang, T., & Johnson, S. P. (2014). Does bilingual experience affect early visual perceptual development? *Frontiers in Psychology, 5,* 1429.

RESEARCH REPORTS

An, X., & **Schonberg, C.** (2024). *The impact of IXL on students' math self-efficacy* (pp. 1–13). https://www.ixl.com/materials/us/research/The_Impact_of_IXL_on_Students_Math_Self-Efficacy.pdf

Schonberg, C. (2024a). *Predictive validity of the IXL Real-Time Diagnostic using the Ontario EQAO Assessment of Mathematics as criterion* (pp. 1–8). https://www.ixl.com/materials/us/research/Real-Time_Diagnostic_and_Ontario_EQAO_Assessment_of_Mathematics_Validation_Study.pdf

Schonberg, C. (2024b). *Predictive validity of the IXL Real-Time Diagnostic using the Pennsylvania Keystone Exams as criterion* (pp. 1–7). https://www.ixl.com/materials/us/research/Real-Time_Diagnostic_and_Pennsylvania_Keystone_Exams_Validation_Study.pdf

Schonberg, C. (2024c). *The impact of IXL on ELA learning in Alabama* (pp. 1–15). https://www.ixl.com/materials/us/research/The_Impact_of_IXL_on_ELA_Learning_in_Alabama.pdf

Schonberg, C. (2024d). *The impact of IXL on math and ELA learning in New Hampshire* (pp. 1–11). https://www.ixl.com/materials/us/research/The_Impact_of_IXL_in_New_Hampshire.pdf

Schonberg, C. (2024e). *The impact of IXL on math and ELA learning in Pennsylvania high schools* (pp. 1–16). https://www.ixl.com/materials/us/research/The_Impact_of_IXL_in_Pennsylvania_High_Schools.pdf

Schonberg, C. (2024f). *The impact of IXL on math learning in an Ontario district school board* (pp. 1–11). https://www.ixl.com/materials/us/research/The_Impact_of_IXL_in_an_Ontario_District_School_Board.pdf

Schonberg, C. (2024g). *The impact of IXL on math learning in Maryland* (pp. 1–5). https://www.ixl.com/materials/us/research/The_Impact_of_IXL_in_Maryland.pdf

Schonberg, C., & Hargis, M. B. (2024). *The impact of IXL on math and ELA learning in a Nebraska school district as measured by NSCAS* (pp. 1–24). https://www.ixl.com/materials/us/research/The_Impact_of_IXL_on_NSCAS_Performance_in_a_Nebraska_School_District.pdf

Schonberg, C. (2023a). *Assessing the predictive validity of the IXL Real-Time Diagnostic using the North Carolina End-of-Grade Mathematics Tests as criterion* (pp. 1–8). https://www.ixl.com/materials/us/research/Real-Time_Diagnostic_and_NC_EOG_Math_Tests_Validation_Study.pdf

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Schonberg, C. (2023b). *Boosting student achievement with IXL's Diagnostic Snapshot* (pp. 1–11). https://www.ixl.com/materials/us/research/Boosting_Student_Achievement_with_IXL_s_Diagnostic_Snapshot.pdf

Schonberg, C. (2023c). *How the dynamic nature of IXL's SmartScore supports student learning* (pp. 1–11). https://www.ixl.com/materials/us/research/How_IXLs_SmartScore_Supports_Student_Learning.pdf

Schonberg, C. (2023d). *Predictive validity of the IXL Real- Time Diagnostic Assessment using the West Virginia General Summative Assessment as criterion* (pp. 1–9). https://www.ixl.com/materials/us/research/Real-Time_Diagnostic_and_WVGSA_validation_study.pdf

Schonberg, C. (2023e). *Predictive validity of the IXL Real-Time Diagnostic Assessment using the Key Stage 2 SATs as criterion* (pp. 1–7). https://www.ixl.com/materials/us/research/Real-Time_Diagnostic_and_UK_KS2_SATs_Validation_Study.pdf

Schonberg, C. (2023f). *The impact of IXL on ACT Math performance in a Wisconsin high school* (pp. 1–5). https://www.ixl.com/materials/us/research/The_Impact_of_IXL_Math_in_a_Wisconsin_High_School.pdf

Schonberg, C. (2023g). *The impact of IXL on math and ELA learning in a West Virginia school district* (pp. 1–14). https://www.ixl.com/materials/us/research/The_Impact_of_IXL_in_a_West_Virginia_School_District.pdf

Schonberg, C. (2023h). *The impact of IXL on math and ELA learning in Texas* (pp. 1–15). https://www.ixl.com/materials/us/research/The_Impact_of_IXL_in_Texas.pdf

Schonberg, C. (2023i). *The impact of IXL on math learning among dual-enrollment high school students* (pp. 1–10). https://www.ixl.com/materials/us/research/The_Impact_of_IXL_on_Math_Learning_Among_Dual-Enrollment_High_School_Students.pdf

Schonberg, C. (2023j). *The impact of IXL on math learning in a North Carolina middle school* (pp. 1–12). https://www.ixl.com/materials/us/research/The_Impact_of_IXL_on_Math_Learning_in_a_North_Carolina_Middle_School.pdf

Schonberg, C. (2023k). *The impact of IXL on math learning in Connecticut* (pp. 1–4). https://www.ixl.com/materials/us/research/The_Impact_of_IXL_on_Math_Learning_in_Connecticut.pdf

Schonberg, C. (2023l). *The impact of IXL on math learning in Minnesota* (pp. 1–17). https://www.ixl.com/materials/us/research/The_Impact_of_IXL_in_Minnesota.pdf

Schonberg, C. (2023m). *The impact of IXL on math learning in Rhode Island* (pp. 1–4). https://www.ixl.com/materials/us/research/The_Impact_of_IXL_on_Math_Learning_in_Rhode_Island.pdf

Schonberg, C. (2023n). *The impact of IXL on math learning in the Southwest* (pp. 1–3). https://www.ixl.com/materials/us/research/The_Impact_of_IXL_on_Math_Learning_in_the_Southwest.pdf

Schonberg, C. (2023o). *The impact of IXL on maths learning in a Northamptonshire primary school* (pp. 1–10).

https://www.ixl.com/materials/us/research/The_Impact_of_IXL_in_a_Northamptonshire_Primary_School.pdf

Schonberg, C., & Hargis, M. B. (2023). *The impact of IXL on math and ELA learning in a Nebraska school district* (pp. 1–29). https://www.ixl.com/materials/us/research/The_Impact_of_IXL_in_a_Nebraska_School_District.pdf

An, X., Schonberg, C., & Bashkov, B. M. (2022). *IXL implementation fidelity and usage recommendations* (pp. 1–17). https://www.ixl.com/materials/us/research/IXL_Implementation_Fidelity_and_Usage_Recommendations.pdf

Schonberg, C. (2022a). *Assessing the predictive validity of the IXL Real-Time Diagnostic using Star Assessments as criterion* (pp. 1–10). https://www.ixl.com/materials/us/research/Assessing_the_Predictive_Validity_of_the_IXL_Real-Time_Diagnostic_(Star).pdf

Schonberg, C. (2022b). *The impact of IXL on ACT English and ACT Reading performance in Tennessee* (pp. 1–9). https://www.ixl.com/materials/us/research/The_Impact_of_IXL_in_Tennessee.pdf

Schonberg, C. (2022c). *The impact of IXL on ELA learning in a Louisiana school district* (pp. 1–12). https://www.ixl.com/materials/us/research/The_Impact_of_IXL_ELA_in_Louisiana.pdf

Schonberg, C. (2022d). *The impact of IXL on high school math and ELA learning in California* (pp. 1–10). https://www.ixl.com/materials/us/research/The_Impact_of_IXL_in_California_High_Schools.pdf

Schonberg, C. (2022e). *The impact of IXL on high school math learning in Texas* (pp. 1–9). https://www.ixl.com/materials/us/research/The_Impact_of_IXL_Math_in_Texas_High_Schools.pdf

Schonberg, C. (2022f). *The impact of IXL on math and ELA learning in Georgia* (pp. 1–14). https://www.ixl.com/materials/us/research/The_Impact_of_IXL_in_Georgia_(2022).pdf

Schonberg, C. (2022g). *The impact of IXL on math and ELA learning in Wyoming* (pp. 1–15). https://www.ixl.com/materials/us/research/The_Impact_of_IXL_on_Math_and_ELA_Learning_in_Wyoming.pdf

Schonberg, C., & Hochstein, L. (2022). *The impact of IXL ELA on early literacy development* (pp. 1–15). https://www.ixl.com/materials/us/research/The_Impact_of_IXL_on_Early_Literacy.pdf

Schonberg, C. (2021a). *Demonstrating grade-level predictive validity of the IXL Real-Time Diagnostic using the Virginia SOL as criterion* (pp. 1–12). https://www.ixl.com/materials/us/research/IXL_Real-Time_Diagnostic_Grade-Level_Validation_Study_(VA_SOL).pdf

Schonberg, C. (2021b). *The impact of IXL on math and ELA achievement in a Virginia school district* (pp. 1–13). https://www.ixl.com/research/The_Impact_of_IXL_in_a_Virginia_School_District.pdf

Schonberg, C. (2021c). *The impact of IXL on math and ELA learning in Kansas* (pp. 1–14). https://www.ixl.com/materials/us/research/Impact_of_IXL_in_Kansas.pdf

Schonberg, C. (2021d). *The impact of IXL on STEM learning in Oklahoma schools* (pp. 1–12). https://www.ixl.com/research/Impact-of-IXL-in-Oklahoma.pdf

PRESENTATIONS

Talks

Schonberg, C., An, X., Hargis, M. B., & Bashkov, B. M. (2024, April). *Assessing the benefit of productive struggle in an online learning platform*. Paper presented at the Annual Meeting of the American Educational Research Association, Philadelphia, PA.

Bashkov, B. M., Turley, M. J., **Schonberg, C.**, & Hargis, M. H. (2024, April). *Supporting post-COVID adolescent and adult learner recovery and growth in mathematics through personalized learning technology*. Paper presented at the Annual Meeting of the American Educational Research Association, Philadelphia, PA.

An, X., Bashkov, B. M., **Schonberg, C.**, & Hargis, M. H. (2024, April). *The impact of IXL on student academic growth: A three-wave latent growth model.* Paper presented at the Annual Meeting of the American Educational Research Association, Philadelphia, PA.

An, X., Bashkov, B. M., & **Schonberg, C.** (2023, April). *Evaluating the impact of personalized online learning on English language arts achievement in West Virginia.* Paper presented at the Annual Meeting of the American Educational Research Association, Chicago, IL.

Schonberg, C., An, X., & Bashkov, B. (2022, April). *The impact of IXL on Hispanic students' ELA achievement*. Paper presented at the Twelfth Biennial Meeting of the Cognitive Development Society, Madison, WI.

Schonberg, C., & Sandhofer, C. M. (2020, July). *Why do multiple examples help children learn words? The roles of aggregation, decontextualization, and memory dynamics.* Paper presented at the (virtual) International Congress on Infant Studies, Glasgow, Scotland.

Meylan, S., Braginsky, M., deMayo, B., Sanchez, A., **Schonberg, C.**, Srinivasan, M., Vlach, H., Lupyan, G., Griffiths, T., & Frank, M. C. (2019, November). *Wordful: Tracking early productive vocabulary growth with smartphones.* Paper presented at the 44th Boston University Conference on Language Development, Boston, MA.

Schonberg, C., Sandhofer, C. M., & Johnson, S. P. (2017, October). *Monolingual and bilingual toddlers' use of pragmatic and object cues in word learning*. Paper presented at the Tenth Biennial Meeting of the Cognitive Development Society, Portland, OR.

Schonberg, C., & Russell, E. E. (2016, May). *Past language experience, current language context, and bilingual children's word learning*. Paper presented at the Symposium on Cognitive and Language Development, Los Angeles, CA.

Schonberg, C., Atagi, N., & Sandhofer, C. (2015, May). *Does knowledge of translation equivalents influence cognitive flexibility in bilingual children?* Paper presented at the Symposium on Cognitive and Language Development, Irvine, CA.

Schonberg, C., Sandhofer, C., & Johnson, S. P. (2014, May). *Language experience and toddlers' visual attention to pragmatic cues*. Paper presented at the Symposium on Cognitive and Language Development, Los Angeles, CA.

Schonberg, C., Sandhofer, C., & Johnson, S. P. (2013, May). *Impacts of bilingualism on early perceptual development.* Paper presented at the Symposium on Cognitive and Language Development, Irvine, CA.

Posters

*Note: * denotes student author*

Schonberg, C., An, X., & Bashkov, B. M. (2023, April). *Personalized learning attenuates learning loss among rural students.* Poster presented at the Annual Meeting of the American Educational Research Association, Chicago, IL.

An., X., Bashkov, B. M., & **Schonberg, C.** (2022, April*). IXL implementation fidelity and impact on student learning*. Poster presented at the Annual Meeting of the American Educational Research Association, San Diego, CA.

Barmore, B., **Schonberg, C.**, & Vlach, H. (2022, April). *Metavocabulary: Do children understand the implications of knowing words?* Poster presented at the Twelfth Biennial Meeting of the Cognitive Development Society, Madison, WI.

Schonberg, C., & Zettersten, M. (2021, April). *Characterizing the practices of reporting sex differences in infancy research*. Poster presented at the Society for Research in Child Development Biennial Meeting (virtual).

Knabe, M., **Schonberg, C.**, & Vlach, H. (2021, April). *Does the public know what researchers know? Perceived task difficulty impacts adults' intuitions about children's early word learning*. Poster presented at the Society for Research in Child Development Biennial Meeting (virtual).

Schonberg, C., & Vlach, H. (2019, October). *When time changes the boundaries: Shifts in children's generalizations after a delay.* Poster presented at the Eleventh Biennial Meeting of the Cognitive Development Society, Louisville, KY.

Knabe, M., **Schonberg, C.**, & Vlach, H. (2019, October). *Does the public know what researchers know? Assessing adults' understanding of children's early word learning.* Poster presented at the Eleventh Biennial Meeting of the Cognitive Development Society, Louisville, KY.

Schonberg, C., & Vlach, H. (2019, July). *Temporal dynamics of preschoolers' novel word learning and categorization*. Poster presented at the 2019 Meeting of the Cognitive Science Society, Montreal, Quebec, Canada.

Schonberg, C., Sandhofer, C. M., & Johnson, S. P. (2019, March). *Language background and toddlers' socially-cued word learning over time.* Poster presented at the Society for Research in Child Development Biennial Meeting, Baltimore, MD.

Schonberg, C., Russell, E. E., & Luna, M. (2019, March). *Effects of linguistic context on Spanish-English bilinguals' word learning.* Poster presented at the Society for Research in Child Development Biennial Meeting, Baltimore, MD.

Schonberg, C., Sandhofer, C. M., & Johnson, S. P. (2018, July). *How do pragmatic and object cues affect monolingual and bilingual toddlers' visual attention during word learning?* Poster presented at the 2018 Meeting of the Cognitive Science Society, Madison, WI.

Cheng, A.*, Tsai, W. M.*, **Schonberg, C.**, Sandhofer, C. M., & Johnson, S. P. (2018, May). *Effect of infant language background and gaze-following ability on productive vocabulary*. Poster presented at the Symposium on Language and Cognitive Development, Irvine, CA, and the Psychology Undergraduate Research Conference, UCLA, Los Angeles, CA.

Grebennik, M.*, Yortiss, J.*, **Schonberg, C.**, Sandhofer, C. M., & Johnson, S. P. (2018, May). *Bilingual versus monolingual language environment and its effect on word learning.* Poster presented at the Psychology Undergraduate Research Conference, UCLA, Los Angeles, CA.

Flores, C.*, **Schonberg, C.**, Sandhofer, C. M., & Russell, E. R. (2018, May). *How does task language affect Spanish-English bilinguals' word processing?* Poster presented at the Symposium on Language and Cognitive Development, Irvine, CA, and the Psychology Undergraduate Research Conference, UCLA, Los Angeles, CA.

Schonberg, C., Marcus, G., & Johnson, S. P. (2017, April). *Abstract rule learning in infancy: The role of item repetition*. Poster presented at the Society for Research in Child Development Biennial Meeting, Austin, TX.

Schonberg, C., & Russell, E. E. (2017, April). *Word learning in bilingual children: Effects of past language experience and present language context.* Poster presented at the Society for Research in Child Development Biennial Meeting, Austin, TX.

Russell, E. E., **Schonberg, C.**, & Barreiro, S.* (2016, August). *A shape-heavy vocabulary does not a shape bias make: A comparison of the content of English-learning children's and Spanish-learning children's typical vocabularies.* Poster presented at the 2016 Meeting of the Cognitive Science Society, Philadelphia, PA.

Schonberg, C., Sandhofer, C., & Johnson, S. P. (2016, May). *Monolingual and bilingual infants' visual attention and use of pragmatic cues in novel word learning*. Poster presented at the International Conference on Infant Studies, New Orleans, LA.

Choy, C.*, **Schonberg, C.**, & Sandhofer, C. M. (2016, May). *Effects of bilingual translation equivalent knowledge on executive function*. Poster presented at the 96th Meeting of the Western Psychological Association, Long Beach, CA, and the Psychology Undergraduate Research Conference, UCLA, Los Angeles, CA.

Garcia, C.*, **Schonberg, C.**, Sandhofer, C. M., & Johnson, S. P. (2016, April). *Toddlers' attention to pragmatic cues: The role of language experience*. Poster presented at the 96th Meeting of the Western Psychological Association, Long Beach, CA, and the Psychology Undergraduate Research Conference, UCLA, Los Angeles, CA.

Rodriguez, M.*, **Schonberg, C.**, Russell, E. E., & Sandhofer, C. M. (2016, May). *The shape-bias in bilingual children and its relationship to language of presentation.* Poster presented at the Psychology Undergraduate Research Conference, UCLA, Los Angeles, CA.

Smith, A.*, **Schonberg, C.**, & Russell, E. E. (2016, May). *The relation between English vocabulary size and shape-bias in bilingual children.* Poster presented at the Psychology Undergraduate Research Conference, UCLA, Los Angeles, CA.

Schonberg, C., Sandhofer, C., & Johnson, S. P. (2015, October). *Do varied pragmatic cues affect visual attention and word learning in monolingual and bilingual toddlers?* Poster presented at the Ninth Biennial Meeting of the Cognitive Development Society, Columbus, OH.

Russell, E. E., & **Schonberg, C.** (2015, October). *You say apple, I say manzana: Overlap in English- and Spanish-learning children's early vocabularies.* Poster presented at the Ninth Biennial Meeting of the Cognitive Development Society, Columbus, OH.

Russell, E. E., & **Schonberg, C.** (2015, October). *Children's linguistic background and their ability to learn labels for objects from complex categories.* Poster presented at the Ninth Biennial Meeting of the Cognitive Development Society, Columbus, OH.

Schonberg, C., Atagi, N., & Sandhofer, C. (2015, July). *Apple, pomme, manzana: Productive vocabulary and cognitive flexibility in bilingual preschoolers.* Poster presented at the 2015 Meeting of the Cognitive Science Society, Pasadena, CA.

Schonberg, C., Atagi, N., & Sandhofer, C. (2015, March). *How knowledge of translation equivalents influences cognitive flexibility in bilingual children.* Poster presented at the Society for Research in Child Development Biennial Meeting, Philadelphia, PA.

Rochanavibhata, S.*, Atagi, N., **Schonberg, C.**, & Sandhofer, C. (2015, March). *The relation between bilingual children's productive vocabularies and word learning.* Poster presented at the Society for Research in Child Development Biennial Meeting, Philadelphia, PA.

Kedrick, K.*, Skagen, B.*, **Schonberg, C.**, Tsang, T., Sandhofer, C. M., & Johnson, S. P. (2014, May). *The effects of bilingualism on infants' attention to social and natural environments.* Poster presented at the Symposium on Cognitive and Language Development, Los Angeles, CA.

Schonberg, C., Sandhofer, C., & Johnson, S.P. (2013, October). *Early effects of language background on perceptual development.* Poster presented at the Eighth Biennial Meeting of the Cognitive Development Society, Memphis, TN.

MENTORING EXPERIENCE

Note: PROPS is a program that aims to increase underrepresented students' involvement in research and prepare them for PhD work.

Total undergraduate students mentored	42
From underrepresented backgrounds	26
Presented at conferences	11
PROPS students	3
Honors students	2
McNair Scholars	1

TEACHING EXPERIENCE

Educational Psychology Diversity Seminar (Instructor) – Spring 2021

Research Methods in Psychology (100B; Master TA) – Fall 2016, Winter 2017, Spring 2017
- Master TA responsibilities: instruct 100B section TAs each week in section activities; write weekly quizzes; write exam questions; hold review sessions before exams; grade exams; communicate with the campus Center for Accessible Education to support students' accommodations; administrative duties (e.g. room and equipment reservations; quiz and exam copies)

Research Methods in Psychology (100B; Section TA) – Spring 2014, Spring 2016, Winter 2018
Research Methods in Developmental Psychology (131; Section TA) – Winter 2015, Winter 2016
Developmental Psychology (130; Section TA) – Spring 2015, Spring 2018
- Section TA responsibilities: facilitate student-led discussions of empirical articles; review lecture material

Cognitive Development (133B; Lecture TA) – Winter 2014, Fall 2014, Fall 2015
Perceptual Development (133E; Lecture TA) – Fall 2013, Summer 2015
- Lecture TA responsibilities: grade students' assignments (e.g. response papers, article critiques); hold review sessions before exams; grade exams

Invited Lectures: UCLA, UW-Madison, Brown University

DEPARTMENTAL, UNIVERSITY, AND SOCIETY SERVICE

2024	Reviewer, AERA 2025 (Division H and SIG TICL)
2013 – 2015	Undergraduate Outreach Committee Leader, Underrepresented Graduate Students in Psychology, UCLA
2013 – 2015	Secretary, Psychology Graduate Student Association, UCLA
2013 – 2016	Graduate Advisor, Undergraduate Research Journal of Psychology, UCLA
2014, 2016	Conference Planning Committee, Symposium on Cognitive and Language Development
2014 – 2015	Co-organizer, Developmental Forum Speaker Series, UCLA
2013 – 2014	Head of Scheduling, Graduate Student Recruitment Weekend, UCLA
2013, 2015	Spring Symposium Planning Committee, Psychology in Action, UCLA
2012 – 2018	Member, Psychology Graduate Student Association, UCLA

OTHER RELEVANT EXPERIENCE

2019	Summer Institute for Computational Social Science
	Project: Characterizing the Content of Parents' and Children's Speech
	● This project used structural topic modeling to investigate the content of parents' and children's speech, using ~2 million utterances from CHILDES, and examined how this speech changes across development.
2016 – 2018	Writing Consultant, UCLA Graduate Writing Center
	Workshops led:
	How to Make an Argument
	Introduction to Publishing Journal Articles
	Applying for and Writing an NIH Training Fellowship
	Finishing and Filing the Dissertation

BO BASHKOV

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EDUCATION

Ph.D., Assessment and Measurement

James Madison University, May 2015, cumulative GPA: 4.00

Dissertation title: *Examining the Performance of the Metropolis-Hastings Robbins-Monro Algorithm in the Estimation of Multilevel Multidimensional IRT Models*

Advisor: Dr. Christine DeMars

M.A., Psychological Sciences – Quantitative Psychology

James Madison University, May 2012, cumulative GPA: 4.00

Thesis title: *Using Longitudinal Mean and Covariance Structures (LMACS) Analysis to Assess Construct Stability Over Two Time Points: An Example with Psychological Entitlement*

Advisor: Dr. Sara Finney

B.A., Psychology and German

Berea College, May 2010, *cum laude*

EXPERIENCE

Senior Manager of Research, July 2024 – Present

IXL Learning, San Mateo, CA

* Design and maintain IXL's research strategy
* Lead and mentor IXL's research team
* Manage external research partners
* Oversee the design and execution of experimental and quasi-experimental studies
* Lead and manage cross-functional team efforts (e.g., product efficacy and validation research)
* Gather internal and external data to discover useful insights for sales, marketing, & product teams
* Collaborate on proposals for new business and contact expansion opportunities
* Provide training on research and psychometrics to various IXL teams
* Document and disseminate research results through publications and presentations
* Present at conferences and mentor graduate students and recent graduates entering industry

Manager of Research, July 2022 – June 2024

IXL Learning, San Mateo, CA

* Designed and maintained IXL's research strategy
* Led and mentored IXL's research team
* Led and managed cross-functional team efforts such as new product development and validation
* Oversaw the design and execution of experimental and quasi-experimental studies
* Provided training on research methods and psychometrics to IXL's curriculum and other teams
* Gathered internal and external data to discover useful insights for sales, marketing, and product teams
* Managed external research partners
* Documented and disseminated research results through publications and presentations

Lead Research Scientist, October 2020 – June 2022

IXL Learning Canada, Toronto, ON (10/2020-12/2021); IXL Learning, San Mateo, CA (1/2022-6/2022)

* Designed and maintained IXL's research strategy
* Led and mentored IXL's research team
* Collaborated on the design and execution of experimental and quasi-experimental studies
* Gathered internal and external data to discover useful insights for sales, marketing, and product teams
* Managed external research partners
* Documented and disseminated research results through publications and presentations

Measurement Scientist, July 2017 – September 2020

American Board of Internal Medicine, Philadelphia, PA

∗ Applied creative problem-solving skills to solve practical problems in assessment
∗ Performed research to enhance the production of the most advanced assessments in credentialing
∗ Designed and implemented innovative approaches to assessment
∗ Collaborated on original research and development
∗ Prepared manuscripts for publication and presentation at professional meetings
∗ Provided psychometric analyses and consultation to improve operational testing activities
∗ Performed operational activities to support ABIM exam programs (e.g., standard setting, calibration, key validation, scoring)
* Mentored summer interns
∗ Communicated measurement concepts, analytic results, and recommendations to diverse audiences

Associate Research Psychometrician, July 2016 – June 2017

American Board of Internal Medicine, Philadelphia, PA

∗ Conducted independent and collaborative research on psychometric issues to help improve current and future processes and products
∗ Performed psychometric analyses and consulted with other psychometricians and exam development team to investigate practical issues related to item performance and score interpretation
∗ Provided psychometric support and consultation for exam developers, data analysts, and item writers
∗ Helped exam committees understand and interpret correctly item statistics and exam data
∗ Participated in the facilitation of standard setting and other group-effort initiatives

Associate Psychometrician, May 2015 – June 2016

American Board of Internal Medicine, Philadelphia, PA

∗ Provided psychometric support and consultation for exam developers, data analysts, and item writers
∗ Helped exam committees understand and interpret correctly item statistics and exam data
∗ QCed score reports and exam development documents
∗ Performed psychometric analyses and consulted with other psychometricians and exam development team to investigate practical issues related to item performance and score interpretation
∗ Conducted and collaborated on research projects in certification testing
∗ Participated in the facilitation of standard setting and other group-effort initiatives

Psychometrics/Research Intern, August 2014 – April 2015
The College Board, New York, NY
∗ Conducted higher education research (e.g., validity studies on dual enrollment and remediation)

Doctoral Graduate Assistant, June 2012 – July 2014

Center for Assessment and Research Studies, James Madison University, Harrisonburg, VA

∗ Participated in the development of four assessment instruments for the Madison Collaborative: Ethical Reasoning in Action (JMU's Quality Enhancement Plan initiative, jmu.edu/mc) [a 50-item multiple-choice test, a performance assessment prompt and rubric, an open-response recall test, and a survey of attitudes and dispositions]
∗ Conducted psychometric analyses (e.g., CTT item analysis, distractor analysis, IRT calibration, scoring, scaling, and equating) and provided consultation for the Madison Collaborative in the refinement of assessment instruments and best practices in interpreting students' test scores
∗ Cleaned, scored, and analyzed test data collected to assess general education and student affairs programs
∗ Communicated statistical results through written technical reports and oral presentations to diverse audiences
∗ Collaborated with fellow assessment practitioners and subject-matter experts in the development and refinement of assessment plans and instruments
∗ Assisted in the training of incoming graduate assistants on data management and data analysis techniques using SAS
∗ Assisted in the planning and implementation of a university-wide assessment day
∗ Evaluated academic programs' assessment processes and provided formative feedback
∗ Evaluated research and innovation grant proposals for the Madison Collaborative

Psychometrics/Research Intern, June 2013 – August 2013

Center for Applied Linguistics, Washington, DC

∗ Performed an extensive series of analyses to assess the dimensionality of ACCESS for ELLs® across four grade clusters and three proficiency levels using data from 27 states
∗ Developed a method for reporting diagnostic classification of ELLs into proficiency profiles across the five English language development standards (i.e., social and instructional language, language of the language arts, language of math, language of science, and language of social studies)

Master's Graduate Assistant, June 2010 – May 2012

Center for Assessment and Research Studies, James Madison University, Harrisonburg, VA

∗ Provided assessment consultation services for academic and student affairs programs
∗ Communicated statistical results through written reports and oral presentations
∗ Facilitated and attended client meetings
∗ Collaborated to plan and implement a campus-wide testing program, which included preparing and managing testing materials
∗ Participated in screening, cleaning, and scoring responses to multiple tests administered to the entire student body at the university
∗ Created a catalog for all data collected through campus-wise assessment sessions over 5 years

PEER-REVIEW PUBLICATIONS

Bashkov, B. M., & Coggeshall, W. S. (2021). Using a measurement framework to examine item quality/functioning. In U. Luhanga & A. G. Harbaugh (Eds.), *Basic elements of survey research in education: Addressing the problems your advisor never told you about,* (Chapter 9, pp. 237-265). Charlotte, NC: Information Age Publishing.

Sullivan, M., & Bashkov, B. M. (2020). Visualizing test speededness with item response time, position, and difficulty. *Educational Measurement: Issues and Practice*, *39*(4)*,* issue cover.

Bashkov, B. M., & Clauser, J. C. (2019). Determining item screening criteria using cost-benefit analysis. *Practical Assessment, Research & Evaluation*, *24*(2). Available online: https://scholarworks.umass.edu/pare/vol24/iss1/2/

Bashkov, B. M., & DeMars, C. E. (2017). Examining the performance of the Metropolis-Hastings Robbins-Monro algorithm in the estimation of multilevel multidimensional IRT models. *Applied Psychological Measurement*, *41*, 323-337.

Bashkov, B. M., & Finney, S. J. (2017). Apples to apples: How to investigate whether you are measuring the same construct over time. *SAGE Research Methods Cases*. DOI: http://dx.doi.org/10.4135/9781473993334

Bashkov, B. M., & Finney, S. J. (2013). Applying longitudinal mean and covariance structures (LMACS) analysis to assess construct stability over two time points: An example using psychological entitlement. *Measurement and Evaluation in Counseling and Development, 46,* 289-314.

DeMars, C. E., Bashkov, B. M., & Socha, A. B. (2013). The role of gender in test-taking motivation under low-stakes conditions. *Research & Practice in Assessment, 8*(2), 69-82.

Fulcher, K. H., & Bashkov, B. M. (2012). Do we practice what we preach? The accountability of an assessment office. *Assessment Update, 24*(6), 5-7, 14.

OTHER PUBLICATIONS

An, X., Schonberg, C., & Bashkov, B. M. (2022). *IXL Implementation Fidelity and Usage Recommendations*. San Mateo, CA: IXL Learning.

An, X., Xiong, Y., & Bashkov, B. M. (2022). *Multi-Group Measurement Invariance of the IXL-Real-Time Diagnostic Math Assessment*. San Mateo, CA: IXL Learning.

Bashkov, B. M. (2021). *Assessing the Impact of IXL Math over Three Years: A Quasi-Experimental Study*. San Mateo, CA: IXL Learning.

Bashkov, B. M., Mattison, K., & Hochstein, L. (2021). *IXL Design Principles: Core Features Grounded in Learning Science Research*. San Mateo, CA: IXL Learning.

PEER-REVIEW PRESENTATIONS

Bashkov, B. M., Turley, M., Schonberg, C., Hargis, M. B., & An, X. (2024, April). *Supporting post-Covid adolescent and adult learning recovery and growth in mathematics through personalized learning technology*. Paper presented at the annual meeting of the American Educational Research Association, Philadelphia, PA.

An, X., Bashkov, B. M., Schonberg, C., & Hargis, M. B. (2024, April). *The impact of IXL on student academic growth: A three-wave latent growth model*. Paper presented at the annual meeting of the American Educational Research Association, Philadelphia, PA.

Schonberg, C., An, X., Hargis, M. B., & Bashkov, B. M. (2024, April). *Assessing the benefit of productive struggle in an online learning platform*. Paper presented at the annual meeting of the American Educational Research Association, Philadelphia, PA.

Bashkov, B. M., Xiong, Y., Schonberg, C., Corazza, L., & Mattison, K. (2023, April). *Developing a state-of-the-art universal screener for K-8 mathematics*. Paper presented at the annual meeting of the National Council on Measurement in Education, Chicago, IL.

An, X., Bashkov, B. M., Xiong, Y., & Schonberg, C. (2023, April). *Collecting new validity evidence for the IXL Real-Time Diagnostic math assessment*. Poster presented at the annual meeting of the National Council on Measurement in Education, Chicago, IL.

Schonberg, C., An, X., & Bashkov, B. M. (2023, April). *Personalized learning attenuates learning loss among rural students*. Poster presented at the annual meeting of the American Educational Research Association, Chicago, IL.

An, X., Bashkov, B. M., & Schonberg, C. (2023, April). *Evaluating the impact of personalized online learning on ELA achievement in West Virginia*. Paper presented at the annual meeting of the American Educational Research Association, Chicago, IL.

Schonberg, C., Bashkov, B. M., & An, X. (2022, October). *The impact of IXL Math in Title I Texas high schools*. Paper presented at the annual meeting of the Northeastern Educational Research Association, Trumbull, CT.

Bashkov, B. M., Schonberg, C., & An, X. (2022, April). *Establishing a strong program of validity for the IXL Real-Time Diagnostic Assessment*. Electronic poster presented at the annual meeting of the National Council on Measurement in Education, San Diego, CA.

An, X., Bashkov, B. M., & Schonberg, C. (2022, April). *Implementation fidelity and impact of IXL: A randomized control trial*. Electronic poster presented at the annual meeting of the American Educational Research Association, San Diego, CA.

Bashkov B. M., & Clauser, J. C. (2020, April). *The effect of item writing experience on item quality*. Paper presented at the annual meeting of the National Council on Measurement in Education, San Francisco, CA.

Myers, A., & Bashkov, B. M. (2020, April). *Evaluating use of an online open-book resource in a high-stakes credentialing exam*. Paper presented at the annual meeting of the National Council on Measurement in Education, San Francisco, CA.

Bashkov, B. M. (2019, October). *An Introduction to multilevel structural equation modeling with R*. Workshop given at the annual meeting of the Northeastern Educational Research Association, Trumbull, CT.

Bashkov, B. M., & Clauser, J. C. (2018, April). *How to determine what item screening criteria to use*. Paper presented at the annual meeting of the National Council on Measurement in Education, New York, NY.

Sullivan, M., & Bashkov, B. M. (2017, October). *Using data visualization to explore test speededness in certification exams*. Poster presented at the Timing Impact on Measurement in Education conference, Philadelphia, PA.

Cubbellotti, S., & Bashkov, B. M. (2017, April). *Predicting response time on pretest items from item features*. Paper presented at the annual meeting of the National Council on Measurement in Education, San Antonio, TX.

Bashkov, B. M., & DeMars, C. E. (2016, April). *Examining performance of the MH-RM algorithm with the 3PL multilevel MIRT model*. Paper presented at the annual meeting of the National Council on Measurement in Education, Washington, DC.

Bashkov, B. M., Cubbellotti, S., & Zhang, Y. (2016, April). *Using multilevel item response theory to explain differential item functioning on a medical maintenance of certification exam*. Paper presented at the annual meeting of the American Educational Research Association, Washington, DC.

Zhang, Y., Cubbellotti, S., & Bashkov, B. M. (2016, April). *Factors influencing success on maintenance of certification of internal medicine international medical graduates*. Paper presented at the annual meeting of the American Educational Research Association, Washington, DC.

Cubbellotti, S., Zhang, Y., & Bashkov, B. M. (2016, April). *Comparison of time used by U.S. medical graduates and international medical graduates on maintenance of certification exams across multiple disciplines*. Paper presented at the annual meeting of the American Educational Research Association, Washington, DC.

Bashkov, B. M., Smith, K. N., & Wyatt, J. N. (2015, October). *A closer look at remediation and time to graduation: A quasi-experimental validity study*. Paper presented at the annual meeting of the Northeastern Educational Research Association, Trumbull, CT.

Bashkov, B. M., DeMars, C. E., Yen, S. J., & Kenyon, D. (2014, October). *Providing diagnostic feedback for students developing English language proficiency: A classification profile method*. Paper presented at the annual meeting of the Northeastern Educational Research Association, Trumbull, CT.

Smith, K., Bashkov, B. M., & Fulcher, K. (2014, October). *Assessing Attitudes toward Ethical Reasoning: Examining the Factor Structure of the Survey of Ethical Reasoning*. Paper presented at the annual meeting of the Northeastern Educational Research Association, Trumbull, CT.

Bashkov, B. M., Kenyon, D. M., & Yen, S. J. (2014, April). *Evaluating the structure of academic English*

language operationalized in an English language development assessment. Paper presented at the annual meeting of the American Educational Research Association, Philadelphia, PA.

Bashkov, B. M. (2013, October). *Assessing the dimensionality of the Test of Ethical Reasoning: A demonstration of using exploratory factor analysis with dichotomous data.* Paper presented at the symposium "Assessing Ethical Reasoning in Higher Education: An Example" at the annual conference of the Northeastern Educational Research Association, Rocky Hill, CT.

Bashkov, B. M., & Finney, S. J. (2013, April). *How does entitlement change throughout the college career? A longitudinal mean and covariance structures analysis.* Poster presented at the annual meeting of the American Educational Research Association, San Francisco, CA.

Bashkov, B. M. (2012, October). *Evidence using Benson's external stage.* Paper presented in the symposium "Assessing the Quality of Assessment: A Perspective through the Lens of Validity" at the annual conference of the Northeastern Educational Research Association, Rocky Hill, CT.

Bashkov, B. M., & Finney, S. J., (2011, October). *Is psychological entitlement really stable over time? An empirical investigation.* Paper presented at the annual conference of the Northeastern Educational Research Association, Rocky Hill, CT.

Bashkov, B. M., Finney, S. J., & Kopp, J. P. (2011, May). *Measuring entitlement: Evaluating existing and new validity evidence for the Psychological Entitlement Scale.* Poster presented at the annual convention of the Association for Psychological Science, Washington, DC.

Bashkov, B. M. (2009, November). *The effects of physical attractiveness, gender, and job-type on personnel selection.* Poster presented at the annual meeting of the Kentucky Academy of Science, Highland Heights, KY.

Porter, D. B., McCoy, K., Rodgers, M. M., Bashkov, B. M., & Sutton, A. K. (2009, February). *Predicting student retention and academic success.* Poster presented at the Annual Mid-South Psychology Conference, Jackson, TN.

INVITED PRESENTATIONS

Bashkov, B. M. (2022, October). *Past President Panel Discussion: Using Assessment and Technology to Support Student Learning Post COVID.* Invited moderator at the annual meeting of the Northeastern Educational Research Association, Trumbull, CT.

Bashkov, B. M. (2022, October). *Switching Jobs in Educational Measurement: Advice and Insights.* Invited panel at the annual meeting of the Northeastern Educational Research Association, Trumbull, CT.

Bashkov, B. M. (2022, October). *So You Want to Work in EdTech? What Kinds of Job Opportunities Are Out There and How to Get into the Field?* Invited panel at the annual meeting of the Northeastern Educational Research Association, Trumbull, CT.

Bashkov, B. M. (2021, April). *Careers in the Testing Industry: A Panel Discussion Featuring Alumni from the Assessment & Measurement Ph.D. Program.* Invited virtual panel.

Bashkov, B. M. (2021, April). *IXL Research Overview.* Invited virtual presentation for IXL Curriculum Teams.

Bashkov, B. M. (2021, March). *Berea College Psychology Department: Spring Alumni Panel.* Invited virtual panel.

Bashkov, B. M. (2020, February). *Standard Setting at the American Board of Internal Medicine.* Invited presentation at James Madison University, Harrisonburg, VA.

Bashkov, B. M. (2018, October). *Consider a Career in Certification/Licensure Testing.* Invited panel at the annual conference of the Northeastern Educational Research Association, Trumbull, CT.

Bashkov, B. M. (2015, February). *Examining the Performance of the Metropolis-Hastings Robbins-Monro Algorithm in the Estimation of Multilevel Multidimensional IRT Models.* Invited presentation at Fordham University, New York, NY.

Bashkov, B. M. (2014, June). *General Instrument Design.* Invited workshop for the Assessment Fellowship Program at the Center for Assessment and Research Studies, Harrisonburg, VA.

Bashkov, B. M. (2013, October). *Analyzing Data Using SPSS.* Invited lecture for the graduate course "KIN 655: Research Techniques" at James Madison University, Harrisonburg, VA.

Bashkov, B. M. (2013, August). *Evaluating the Structure of ACCESS for ELLs® Series 203.* Invited webinar for the Wisconsin Center for Educational Research, Madison, WI.

Bashkov, B. M. (2012, August). *Finding/Selecting Instruments and Instrument Development.* Invited workshop for the Graduate Student Institute at the Center for Assessment and Research

Studies, Harrisonburg, VA.

TECHNICAL REPORTS

Bashkov, B. M. (2019). *Is Item Quality Related to Item Writing Experience?* Philadelphia, PA: American Board of Internal Medicine.

Bashkov, B. M. (2019). *Did Item Writer Training and Prototyping Improve Item Quality?* Philadelphia, PA: American Board of Internal Medicine.

Bashkov, B. M., & Clauser, J. C. (2018). *Pass Rates Simulation to Determine How to Report Pass Rates across Multiple Maintenance of Certification Pathways*. Philadelphia, PA: American Board of Internal Medicine.

Bashkov, B. M., & Clauser, J. C. (2018). *Computing Expected Item Response Time for Item Bank and Automated Test Assembly*. Philadelphia, PA: American Board of Internal Medicine.

Bashkov, B. M., & Clauser (2018). *Determining the Number of Items for Knowledge Check-In and Long-Form Maintenance of Certification Exams*. Philadelphia, PA: American Board of Internal Medicine.

Bashkov, B. M, Smith, K., Fulcher, K., & Hawk, E. (2014). *The Madison Collaborative Annual Assessment Report #1 (2013-2014)*. Harrisonburg, VA: James Madison University.

Bashkov, B. M., & Fulcher, K. H. (2014). *The Madison Collaborative: Ethical Reasoning in Action – Summary of Assessment Results – Summer 2014*. Harrisonburg, VA: James Madison University.

Bashkov, B. M., & Fulcher, K. H. (2014). *The Madison Collaborative: Ethical Reasoning in Action – Summary of Assessment Results – Spring 2014*. Harrisonburg, VA: James Madison University.

Bashkov, B. M., DeMars, C. E., Yen, S. J., & Kenyon, D. M. (2013). *Providing Diagnostic Feedback for Students Developing English Language Proficiency: A Classification Profile Method*. Washington, DC: Center for Applied Linguistics.

IXL Learning. (2024). *IXL Math Universal Screener Technical Manual*. San Mateo, CA: IXL Learning.

Bashkov, B. M. (2013). *Test of Oral Communication (OCP) and Attitudes Toward Communication (ATC) Fall 2013 Assessment Results*. Harrisonburg, VA: James Madison University.

Bashkov, B. M. (2013). *Visual Comparison of Incoming Honors Students and Other First-Year Students*. Harrisonburg, VA: James Madison University.

Bashkov, B. M., & Fulcher, K. H. (2013). *The Madison Collaborative: Ethical Reasoning in Action – Summary of Assessment Results – Fall 2013*. Harrisonburg, VA: James Madison University.

Bashkov, B. M., & Pastor, D. (2013). *Assessment Results by Computer Type (Chromebook vs. Desktop Computer)*. Harrisonburg, VA: James Madison University.

Pastor, D., Bashkov, B. M., & Smith, K. (2013). *Cluster Five Assessment Report: Individuals in the Human Community*. Harrisonburg, VA: James Madison University.

Bashkov, B. M. (2013). *Computer Information Systems Assessment Results – Fall 2012*. Harrisonburg, VA: James Madison University.

Bashkov, B. M., & Pastor, D. (2013). *Item and Distractor Analysis of the Sociocultural Domain Assessment (SDA) Data from Freshmen, Sophomores, and Subject-Matter Experts*. Harrisonburg, VA: James Madison University.

Pastor, D., Bashkov, B. M., & Smith, K. (2012). *Cluster Five Assessment Report: Individuals in the Human Community*. Harrisonburg, VA: James Madison University.

Bashkov, B. M., & Koepfler, J. (2012). *Health Studies Senior Assessment Report*. Harrisonburg, VA: James Madison University.

Bashkov, B. M. (2012). *History Assessment Results*. Harrisonburg, VA: James Madison University.

Koepfler, J., Bashkov, B. M., Sundre, D., DePaolis, R., & Martin, V. (2012). *Communication Sciences and Disorders Assessment Report: Results for the Speech-Language Pathology Test (PRAXIS)*. Harrisonburg, VA: James Madison University.

Koepfler, J., Bashkov, B. M., Sundre, D., DePaolis, R., & Martin, V. (2012). *Communication Sciences and Disorders Assessment Report: Results for the Attitudes Toward Learning and Performance Scale*. Harrisonburg, VA: James Madison University.

Pastor, D., Socha, A., & Bashkov, B. M. (2012). *Cluster Five Assessment Report: Individuals in the Human Community*. Harrisonburg, VA: James Madison University.

Waugh, T., Moreau, M., Bashkov, B. M., & Koepfler, J. (2011). *The Test of Oral Communication Skills-2 (TOCS-2): Test Manual*. Harrisonburg, VA: James Madison University.

TECHNICAL REPORTS

(CONT.)

Bashkov, B. M., & Hulleman, C. S. (2011). *Counseling and Student Development Assessment Report: Examining Cognitive and Attitudinal Change on Recognition and Approaching of Students of Concern upon Training of Residential Life Staff.* Harrisonburg, VA: James Madison University.

Bashkov, B. M., Charsha, A., Kopp, J. P., & Hulleman, C. S. (2011). *Office of Judicial Affairs Assessment Report: Evaluation of the Effectiveness of Two Alcohol Education Programs as Measured by Newly-developed Cognitive Tests.* Harrisonburg, VA: James Madison University.

AWARDS AND HONORS

∗ *Certificate of Excellence – Assessment 2020* from the American Board of Internal Medicine
∗ *First Place* (2017) and *Rookie of the Year* (2016) from the Greater Philadelphia Flag Football League
∗ *Certificate of Appreciation* from the Northeastern Educational Research Association – 2015
∗ Full-ride assistantship from The Graduate School, James Madison University – 2010-2014
∗ *Outstanding Service Award* from the Department of Graduate Psychology, James Madison University – May 2014
∗ Travel grant from James Madison University to attend the annual meetings of the American Educational Research Association and the National Council on Measurement in Education – April 2013, April 2014
∗ *Runner-up Best Paper by a Graduate Student Award* by the Northeastern Educational Research Association – October 2011
∗ Travel grant from James Madison University to attend the annual conference of the Northeastern Educational Research Association – October 2011
∗ Full-ride scholarship from Berea College – 2006-2010
∗ Berea College's Dean's List, all semesters, Fall 2006 – Spring 2010
∗ *Outstanding Student Employee Labor Award* by the Department of Foreign Languages, Berea College – May 2009, May 2010
∗ *Best Poster Presentation Award* by the Annual Mid-South Psychology Conference – February 2009

SERVICE

* Past President, Northeastern Educational Research Association (2023 – 2024)
* President, Northeastern Educational Research Association (2022 – 2023)
* President-Elect, Northeastern Educational Research Association (2021 – 2022)
* Director, Board of Directors, Northeastern Educational Research Association (2020 – 2021)
* Communications Committee Chair, Northeastern Educational Research Association (2018 – 2020)
∗ Webmaster, Northeastern Educational Research Association: nera-education.org (2015 – 2018)
∗ Proposal Reviewer, Session Chair, Discussant, Northeastern Educational Research Association (2012 – present)
∗ Proposal Reviewer, National Council on Measurement in Education (multiple years)
∗ Proposal Reviewer, American Educational Research Association (multiple years)
∗ Ad Hoc Reviewer, *PSICOLOGICA* (uv.es/psicologica/) (2015 – 2016)
∗ Ad Hoc Reviewer, *Measurement and Evaluation in Counseling and Development* (2012 – 2016)
∗ Paper Reviewer for the *Best Paper by a Graduate Student Award*, Northeastern Educational Research Association (2012 – 2015)
∗ Student Member of the NCME Annual Awards Committee, National Council on Measurement in Education (2014 – 2015)
∗ Co-Editor of *The NERA Researcher*, official newsletter of the Northeastern Educational Research Association (2012 – 2015)
∗ Student-faculty representative for the Assessment and Measurement Ph.D. program (represent all Ph.D. students at program and faculty meetings) (2013 – 2014)
∗ Representative of the Assessment and Measurement Ph.D. program at the Graduate Student Association Council, James Madison University; Leader of the Professional Development Subcommittee (2012 – 2013)
∗ TED Translator (English to Bulgarian) and Reviewer (English to German) for the TED.com Open Translation Project (2012 – 2013)
∗ Judge for the Virginia Junior Science and Humanities Symposium, JMU (Spring 2011)

PROFESSIONAL DEVELOPMENT

von Davier, A., Hao, J., Lottridge, S., von Davier, M., & Yaneva, V. (2023, April). *From Science Fiction to 2023's GPT-4: Implications for Assessment.* National Council on Measurement in Education.

Cizek, G., Lane, S., & Marion, S. (April 2022). *Advancing Contemporary Validity Theory and Practice: An Interactive Town Hall.* National Council on Measurement in Education.

Costa, A., Kallick, B., & Zmuda, A. G. (September 2021). *Building a Culture of Efficacy with Habits of Mind.* Northeastern Educational Research Association.

Goodman, J., Willse, J., & Runyon, C. (April 2020). *Creating Interactive Applications with R Shiny.* Workshop attended at the annual meeting of the National Council on Measurement in Education.

Cui, Z. (April 2020). *Python, Machine Learning, and Applications – A Gentile Introduction.* Workshop attended at the annual meeting of the National Council on Measurement in Education.

Leventhal, B., & Ames, A. (April 2019). *Using SAS for Monte Carlo Simulation Studies in Item Response Theory*. Workshop attended at the annual meeting of the National Council on Measurement in Education.

Kopp, J. (October 2018). *Automated Test Assembly and More Fun with Optimization Algorithms in R.* Workshop attended at the annual conference of the Northeastern Educational Research Association.

Munzert, S. (April 2017). *A Primer to Web Scraping with R.* Webinar by the American Association for Public Opinion Research.

Grassetti, M. (October 2016). *Writing and Submitting a Journal Article in 12 Weeks!* Workshop attended at the annual conference of the Northeastern Educational Research Association.

Enders, C. (March 2014). *Multiple Imputation for Multilevel Models.* Presentation attended at James Madison University.

Markle, R. (February 2014). *Expanding Education's Predictors and Criteria: The Research and Assessment of 21st Century and Noncognitive Skills.* Webinar attended virtually at James Madison University.

Weeks, J. (October 2013). *Psychometrics in R.* Workshop attended at the annual conference of the Northeastern Educational Research Association.

Bandalos, D., & Gerstner, J. (October 2013). *SEM Methods for Assessing Measurement Invariance.* Workshop attended at the annual conference of the Northeastern Educational Research Association.

Lottridge, S. (October 2013). *Latest Developments in Automated Scoring.* Presentation attended at James Madison University.

Bradshaw, L., & Jurich, D. (October 2012). *An Introduction to Diagnostic Measurement.* Workshop attended at the annual conference of the Northeastern Educational Research Association.

Pastor, D. (October 2012). *An Introduction to Hierarchical Linear Modeling.* Workshop attended at the annual conference of the Northeastern Educational Research Association.

Enders, C. (May 2012). *A Gentle Introduction to Bayesian Statistics.* Presentation attended at James Madison University.

Finney, S., & Gerstner, J. (February 2012). *Incorporating Implementation Fidelity into the Outcomes Assessment Cycle.* Workshop attended at James Madison University.

Coleman, C., Marsh, K., & Fulcher, K. (November 2011). *Reimagining Standards for Student Competency: A Standard-Setting Approach.* Workshop attended at James Madison University.

Pashley, P. (November 2011). *A Sampling of Law School Admission Council (LSAC) Research.* Presentation attended at James Madison University.

Pastor, D., & Finney, S. (October 2011). *Longitudinal Modeling from Two Perspectives: HLM & SEM.* Workshop attended at the annual conference of the Northeastern Educational Research Association.

Zumbo, B., & Shear, B. (October 2011). *The Concept of Validity and Some Novel Validation Methods.* Workshop attended at the annual conference of the Northeastern Educational Research Association.

Meyer, P. (October 2011). *An Introduction to jMetrik: A Free and Open-source Software Program for Comprehensive Psychometric Analysis.* Workshop attended at the annual conference of the Northeastern Educational Research Association.

RELEVANT COURSEWORK

Measurement Theory	Categorical Data Analysis
Item Response Theory	Exploratory Factor Analysis
Advanced Item Response Theory	Data Management and Analysis
Classical Test Theory and G-Theory	Introduction to R Programming
Structural Equation Modeling	Statistical and Measurement Consulting
Advanced Structural Equation Modeling	Assessment Methods and Instrument Design
Hierarchical Linear Models	Assessment Consultation and Practice
Missing Data Methods	Assessment and Public Policy
Multivariate Statistics	Performance Assessment

AFFILIATIONS

American Educational Research Association (AERA), Division H, Online Learning SIGs
National Council on Measurement in Education (NCME)
Northeastern Educational Research Association (NERA)

COMPUTER SKILLS

Psychometrics/Research: R, RMarkdown, SAS, SQL, SPSS, M*plus*, LISREL, jMetrik, IRTPRO, flexMIRT, DIMTEST, BILOG-MG, PARSCALE, WINSTEPS

Graphic Design: Publisher, Picasa, Photoshop

LANGUAGES

Bulgarian (native speaker)
English (fluent; CEFR C1+)
German (working proficiency; CEFR B2)
Spanish (working proficiency; CEFR C1)