

# **EDUDOC SERVICES: INDEXING & ABSTRACTING** **SERVICE OF PERIODICALS**



**Indexing & Abstracting**  
**September - 2022**



**LIBRARY AND DOCUMENTATION DIVISION**  
**NATIONAL INSTITUTE OF EDUCATION**  
**National Council of Educational Research & Training**  
**Sri Aurobindo Marg, New Delhi - 110016**  
**Phone: 011-26863154, E-mail: library-nie@ncert.nic.in**

Greeting from the LDD, NCERT!

The Library and Documentation Division (LDD) of NIE, NCERT is pleased to bring out **“Indexing & Abstracting Service of Periodicals”** for the month of **September, 2022**. This information product of LDD is the collection of Articles in the area of Economics, Educational Research, Elementary Education, Inclusive Education, Geography, Physics, Psychology, Science and Teacher Education.

This is the initiative of LDD to bring subscribed journals for the users to select and recommend relevant articles for their academic fulfillment.

As part of this service, if the user requires particular full text article, they may contact Head LDD on this email [library-nie@nic.in](mailto:library-nie@nic.in) we will provide the scanned/digital copy of the same via email

  
Head, LDD

Library and Documentation Division  
NCERT, Sri Aurobindo Marg  
New Delhi-110016

**CONTENTS**

1. AMERICAN JOURNAL OF PHYSICS	1
2. BIOCHEMISTRY AND MOLECULAR BIOLOGY EDUCATION	5
3. BRITISH JOURNAL OF SPECIAL EDUCATION	9
4. CAMBRIDGE JOURNAL OF EDUCATION	13
5. COGNITIVE PSYCHOLOGY	16
6. COMPUTERS & EDUCATION	18
7. CURRICULUM INQUIRY	22
8. ECONOMIC & POLITICAL WEEKLY	27
9. EDUCATIONAL ASSESSMENT, EVALUATION AND ACCOUNTABILITY	32
10. EDUCATIONAL MEASUREMENT: ISSUES AND PRACTICE	35
11. EDUCATIONAL PSYCHOLOGY IN PRACTICE	40
12. ESSAYS IN CRITICISM	43
13. EUROPEAN JOURNAL OF SPECIAL NEEDS EDUCATION	45
14. EUROPEAN JOURNAL OF TEACHER EDUCATION	51
15. GEOGRAPHICAL JOURNAL	55
16. HARVARD EDUCATIONAL REVIEW	63
17. INDIAN JOURNAL OF GENDER STUDIES	65
18. INTELLECTUAL AND DEVELOPMENTAL DISABILITIES	68
19. INTERNATIONAL JOURNAL OF EDUCATIONAL DEVELOPMENT	71
20. INTERNATIONAL JOURNAL OF EDUCATIONAL RESEARCH	76
21. INTERNATIONAL RESEARCH IN GEOGRAPHICAL AND ENVIRONMENTAL EDUCATION	88
22. JOURNAL OF CROSS-CULTURAL PSYCHOLOGY	91
23. JOURNAL OF HUMANISTIC PSYCHOLOGY	96
24. JOURNAL OF PEACE EDUCATION	100
25. JOURNAL OF THE LEARNING SCIENCES	104
26. LANGUAGE LEARNING	106
27. LINGUISTICS AND EDUCATION	110
28. PHYSICS EDUCATION	122
29. PSYCHOLOGY IN THE SCHOOLS	139
30. PSYCHOLOGICAL REVIEW	145
31. SCHOOL EFFECTIVENESS AND SCHOOL IMPROVEMENT	149
32. THE QUARTERLY JOURNAL OF ECONOMICS	153

Author Index

Title Index

## AMERICAN JOURNAL OF PHYSICS

1. Wang, L. R., Jin, Y. J., & Wang, J. J. (2022, August). A simple and low-cost experimental method to determine the thermal diffusivity of various types of foods. *American Journal of Physics*, 90(8), 568–572. <https://doi.org/10.1119/5.0087135>

**Abstract:** A simple low-cost method was used to measure the thermal diffusivity of nine different types of foods: potato, sweet potato, pumpkin, taro, radish, eggplant, lemon, tomato, and onion. We cut the foods into spherical shapes, inserted thermocouple sensors into their centers, and immersed them in boiling water. Fitting the time dependence of the center temperature to a heat-conduction model yielded a value for the thermal diffusivity with good consistency between spheres of different radii. This method can be generalized to determine thermal diffusivity of a wide variety of samples.

2. Kufel, D., & Sokal, A. D. (2022, August). Skier and loop-the-loop with friction. *American Journal of Physics*, 90(8), 573–579. <https://doi.org/10.1119/5.0095150>

**Abstract:** We solve analytically the differential equations for a skier on a hemispherical hill and for a particle on a loop-the-loop track when the hill or track is endowed with a coefficient of kinetic friction  $\mu$ . For each problem, we determine the exact “phase diagram” in the two-dimensional parameter plane.

3. Dmitrašinović, V., & Janković, M. R. (2022, August). Perihelion precession in power-law potentials: Hénon’s theorem. *American Journal of Physics*, 90(8), 580–586. <https://doi.org/10.1119/5.0080691>

**Abstract:** In 1977, Michel Hénon proved a remarkable theorem for planar  $N$ -body orbits in power-law potentials that relates the rate of change of the perihelion angle (the precession rate), the rate of change of the period evaluated at constant energy, the angular momentum of an orbit, and the power law of the potential. We provide a simple proof of this theorem for two bodies in periodic orbits that interact via a radial power-law force, which is, of course, equivalent to a one-body problem with a power-law central potential. We discuss this theorem’s underlying assumptions and implications, including its relation to Bertrand’s and Bohlin’s theorems, and we illustrate it with several numerically calculated examples.

4. Shlyonsky, V., de Puelle, B., Bodranghien, F., Bishop, D. P., & Gall, D. (2022, August). Exam problems that link physical concepts with electrical phenomena in living cells. *American Journal of Physics*, 90(8), 587–593. <https://doi.org/10.1119/5.0075228>

**Abstract:** We present a collection of biophysics examination problems that focus on electrodiffusion, the superposition principle, and currents in RC circuits, leading towards an understanding of the Hodgkin–Huxley model of action potentials. These problems link basic concepts in electricity to the physiology of living cells. The models described in these problems are intended help students develop an understanding of electrical processes in cells. Our work shows how introductory-level electricity courses can be

taught in parallel with basic cell (electro)physiology and how basic concepts of electric circuits apply to cellular phenomena.

5. Jia, Q., Luo, Y., Zhou, H., Wang, Y., Wan, J., & Wang, S. (2022, August). Nonlinear coupling in an asymmetric pendulum. *American Journal of Physics*, 90(8), 594–603. <https://doi.org/10.1119/10.0010391>

**Abstract:** We investigate the nonlinear behavior of a simple pendulum fixed to an elastic rod, which can only vibrate horizontally. When released without initial angular momentum, the plane of the pendulum rotates, and the bob traces a delicate stationary pattern. We explain this effect as amplitude modulation due to the nonlinear coupling between the two degrees of freedom. We construct a theoretical model and approximately solve the equations of motion analytically (using the method of multiple scales); we also solve these equations numerically. In the analytical solution, the modulation period depends not only on the dynamical parameters but also on the pendulum's initial release position, which is typical of nonlinear systems. Finally, we build a simple apparatus and conduct a quantitative experiment. The approximate analytical solutions exhibit the same trends as the numerical results and experimental data. After adding linear dissipation, the numerical and experimental results match fairly well. This system can serve as an instructive demonstration as well as a nonlinear dynamics research project for undergraduate students.

6. Xiao, L., Bao, C., Jia, Q., Wu, H., Zhou, H., Wan, J., & Wang, S. (2022, August). On the nonlinearity of a tuning fork. *American Journal of Physics*, 90(8), 604–609. <https://doi.org/10.1119/10.0011387>

**Abstract:** Tuning fork experiments at the undergraduate level usually only demonstrate a tuning fork's linear resonance. In this paper, we introduce an experiment that can be used to measure the nonlinear frequency response curve of a regular tuning fork. Using double-grating Doppler interferometry, we achieve measurement precision of the oscillation amplitude in the range of microns. With this experimental setup, we observe nonlinear behaviors of the tuning fork, such as the softening frequency response curve and the jump phenomenon. This provides an integrated experiment for intermediate-level students and a basis for senior research projects.

7. Sullivan, M. C. (2022, August). Using a smartphone camera to explore ray optics beyond the thin lens equation. *American Journal of Physics*, 90(8), 610–616. <https://doi.org/10.1119/5.0090854>

**Abstract:** Ray optics is a staple of introductory physics classes, but many students do not have the opportunity to explore optics beyond the thin lens equation. In this paper, we expand upon a successful remote experiment using a smartphone camera to explore both the successes and limitations of the thin lens equation. Application of the thin lens equation reveals a linear relationship between the object distance and the inverse image height in pixels. Using the open-source image analysis tool ImageJ to measure the image height, we can find the effective focal length of the smartphone camera lens. Our

measured focal lengths agree well with the stated manufacturer values for the effective focal lengths. Further application of the thin lens equation is not successful, but a modification of the analysis leads to an explanation and experimental determination of the location of the principal planes in the smartphone camera systems. This experiment can work well at the introductory level, either in person or remote, and can be used as an introduction or motivation to explore more advanced topics in ray optics.

8. Slepkov, A. D. (2022, August). Painting in polarization. *American Journal of Physics*, 90(8), 617–624. <https://doi.org/10.1119/5.0087800>

**Abstract:** The array of colors and patterns seen when birefringent materials are inserted between polarizers is a source of amusement, popular science demonstrations, and art. This phenomenon of polarization-filtered coloration is commonly but misleadingly referred to as “interference colors,” despite not arising from the effects of interference. In this work, I clarify the link between polarization filtering and the observed colors and demonstrate how various aspects of birefringence in common household films provide opportunities and challenges for their use in art.

9. Slepkov, A. D. (2022b, August). Quantitative measurement of birefringence in transparent films across the visible spectrum. *American Journal of Physics*, 90(8), 625–634. <https://doi.org/10.1119/5.0087798>

**Abstract:** Common transparent polymer films, such as cellophane and household tape, are frequently used as examples of birefringent materials in textbooks and classroom demonstrations. Qualitatively, birefringence is often demonstrated by layering such films between crossed-polarizers. In this work, we describe an inexpensive experimental setup for the quantitative measurement of birefringence in common household films, suitable for senior high school or undergraduate labs. Whereas traditional approaches for polarization-based classroom experiments typically use monochromatic laser light, we encourage the combined use of an incoherent incandescent light source and a portable spectrometer. In addition, we demonstrate how any concomitant thin-film interference effects can be used to separately measure the *optical thickness* in the most heterogeneous and uniform films. Such measurement can then be used as an independent experimental confirmation of either the film's index of refraction or its thickness, given knowledge of the other. In an effort to provide examples for the data analysis procedures as well as to investigate a range of materials, we measure the birefringence across the visible spectrum of six common household polymer films, including thin kitchen wrap, cellophane, gift basket film, and common adhesive tapes.

10. Bosnar, D., Makek, M., & Matic, Z. (2022, August). A simple setup for the determination of the cosmic muon magnetic moment. *American Journal of Physics*, 90(8), 635–640. <https://doi.org/10.1119/5.0077280>

**Abstract:** We present a simple setup for the measurement of the magnetic moment of cosmic muons convenient for a student laboratory experiment. A significant simplification is made in the detector system compared to previous experiments of this

kind, yet it retains all the necessary functionality of the system. This simplification additionally allows for the use of low-cost custom-made electronics for data readout and storage. These improvements considerably reduce the cost and provide a more accessible setup for a student laboratory experiment.

## BIOCHEMISTRY AND MOLECULAR BIOLOGY EDUCATION

1. Du Toit, D., & Koorsen, G. (2022, April 25). How useful is post-graduate education in biochemistry for entry into the South African labour market? *Biochemistry and Molecular Biology Education*, 50(4), 354–359. <https://doi.org/10.1002/bmb.21627>

**Abstract:** Biochemistry encompasses a broad range of life science disciplines. Unlike more vocational disciplines such as pharmacy or medicine, the career path associated with biochemistry is less clearly defined. An important question is whether the skills set provided by post-graduate biochemistry education, defined as BSc (Hons.), MSc, or PhD degrees, is aligned with the requirements of a career in academia or industry. This article reports on former post-graduate biochemistry students and their careers and aims to establish whether former post-graduate students perceive a post-graduate qualification in biochemistry as useful for entry into the job market. This article is based on responses of 64 former post-graduate biochemistry students from South African universities who have graduated between 2010 and 2019. Findings show that most post-graduate biochemistry graduates continue a career in academia after graduating. Some pursue a career in the industry, while a very small number of biochemistry post-graduates are currently unemployed. These findings suggest that a post-graduate degree in biochemistry provides the necessary scientific and research skills sought after by the employment sector in South Africa.

**Keywords:** biochemistry, employability, post-graduate, skills, South Africa

2. Charczenko, R., McMahon, M., Kandl, K., & Rutherford, R. (2022, June 20). LacOp : A free web-based lac operon simulation that enhances student learning of gene regulation concepts. *Biochemistry and Molecular Biology Education*, 50(4), 360–368. <https://doi.org/10.1002/bmb.21638>

**Abstract:** Here, we describe a free, web-based simulation of the lac operon, “LacOp,” that is designed to enhance the learning of prokaryotic gene regulation and pathways in advanced high school and undergraduate genetics courses. This new electronic resource was created by a team of students in an advanced undergraduate course and is hosted online (<http://flask-env.rnwhymamqf.us-west-2.elasticbeanstalk.com/lacop>). LacOp has a simple web interface compatible with a range of devices, including smartphones. To determine whether the LacOp simulation enhances student learning from traditional instruction, we introduced the lac operon to undergraduate genetics students through a traditional classroom experience followed by use of the LacOp simulation. Students worked on their own using the included tutorial to create and test the effect of various genotypes on *E. coli* lactose metabolism and regulation. Upon completion of the tutorial, students showed measurable gains in conceptual understanding of the lac operon. These students also reported a generally favorable opinion of the LacOP simulation as a use of their instructional time.

**Keywords:** bioinformatics, gene regulation, lac operon, modeling, online laboratory, pathway, Python, systems-based thinking

3. Ramalingam, M., Jayesh, R., & Parthasarathi, S. (2022, July). Dentistry students' opinion toward Biochemistry course and its relevance in clinical practice in Chennai, India. *Biochemistry and Molecular Biology Education*, 50(4), 369–372. <https://doi.org/10.1002/bmb.21640>

**Abstract:** Biochemistry is a subject that is essential to understand the molecular basis of a disease, its diagnosis, and prognosis. However, study of biochemistry in dentistry at the undergraduate level is considered to be much teacher-oriented and the students show a lackluster attitude toward the subject. This questionnaire study is carried out to understand the perception of dental students in studying biochemistry and its relevance in dental practice. A pre-set questionnaire was sent to Bachelor of Dental Surgery students from first to final year and the responses were recorded. Although students are positive about liking biochemistry as a theory subject, still many are wary of the detailed study of complex reactions and metabolic pathways, which hampers the extensive study of the subject and its application in clinical practice.

**Keywords:** Bachelor of Dental Surgery, biochemistry, dental education, questionnaire

4. Chang, M. (2022, July). Plasmid-to-plasmid Southern blot analysis validates the presence of nucleotide binding site (*nbs*) sequences in cloned plasmids. *Biochemistry and Molecular Biology Education*, 50(4), 373–380. <https://doi.org/10.1002/bmb.21642>

**Abstract:** Southern blot analysis is an important molecular biology technique for identifying a specific sequence in DNA samples. Although it is no longer used extensively in recent years, the steps and underlying principles of Southern blot are applicable to modern biology. High sensitivity and limited background are keys to successful Southern blots, whereas obtaining good quality and quantity of genomic DNA as starting materials and detecting a single/low copy target sequence in the genome can be challenging. To ensure student success in performing the technique for the first time, a modified “plasmid-to-plasmid” Southern blot was implemented to confirm the presence of grape nucleotide-binding site (*nbs*) sequences in cloned plasmids like those described previously. The plasmid DNA and a control plasmid, pSCA7 (T1-T3-W6) containing a known grape *nbs* sequence, were digested with restriction enzymes, followed by agarose gel electrophoresis. The DNA band corresponding to the *nbs* sequence of the pSCA7 (T1-T3-W6) was extracted from the gel for PCR digoxigenin (DIG) probe synthesis. At the same time, the cloned plasmid DNA and its digested DNA fragments were blotted from the gel onto nylon membranes to be hybridized with the DIG probe followed by the detection for *nbs* sequences. Students successfully performed Southern blots to confirm the presence of *nbs* sequences in their cloned plasmids and wrote up the results following the format of scientific research papers. They learned the principles and applications of Southern blot and gained hands-on experience with associated techniques.

**Keywords:** laboratory exercise, nucleic acid hybridization and detection, PCR DIG probe labeling, plasmid-to-plasmid Southern blot

5. Thyssen, C., Johannes, E., Müller, K., & Wünn, J. (2022, April 27). Non-genetically modified organism in vitro CRISPR/Cas9 gene editing of the *lacZα* gene: A 4.5 h laboratory course for senior high-school students. *Biochemistry and Molecular Biology Education*, 50(4), 393–400. <https://doi.org/10.1002/bmb.21622>

**Abstract:** The CRISPR/Cas9 system opens new horizons (M. Adli, Nat Commun, 2018) regarding genetic modifications of living organisms but also as an in vitro tool in laboratory protocols. Therefore, it boosts possibilities in research and future medical treatments. As the controversial claim of genomically edited babies by He Jiankui (Cyranoski D., Nature, 2019) demonstrates, the new gene editing potentials entail ethical discussions. A public or social discussion presupposes not only a theoretical knowledge or understanding of the system, but also profits from direct laboratory experiences showing how easy these techniques can be applied. Introducing numerous students and classes into these emerging techniques in a modern biology classroom depends on a suitable course concept, which fits legal and organizational requirements at the same time. Therefore, we implemented an appropriate hands-on laboratory course for senior high-school students, lasting just 4.5 h. Particularly with regard to European regulations concerning the handling of genetically modified organisms, the constructs and protocols avoid the transfer of Cas9 DNA. This normally mandatory transfer was replaced by in vitro gene-editing. This leads to Cas9 induced gene knock-outs due to frame shifts and/or the excision of DNA fragments in common *Escherichia coli* (*E. coli*) plasmids, such as pUC19. This gene knock-out concept covers various steps: In vitro plasmid editing with Cas9, ligation and transformation of *E. coli* cells with the modified plasmid DNA and finally the spread plating of transformed *E. coli* cells in order to analyze colonies after overnight incubation. The successful excision of DNA fragments by in vitro Cas9 treatment was determined by subsequent gel electrophoresis.

**Keywords:** CRISPR, gene editing, laboratory course, non-genetically modified organism

6. Desa, S., Zuhaidi, N. D., & Nordin, N. (2022, May 30). The transition from the biochemistry laboratory to home discovery during COVID-19. *Biochemistry and Molecular Biology Education*, 50(4), 401–402. <https://doi.org/10.1002/bmb.21636>

**Abstract:** As a result of the COVID-19 pandemic, it is crucial for an introductory course in biochemistry to move from in-person instruction to total remote learning. There are four transferable skills in the course: problem-solving, laboratory psychomotor skills, data analysis and interpretation skills, and presentation skills. Since all lab buildings were closed for learning activities, we responded quickly to ensure the transferability of the skills. We modified the laboratory activity as a home discovery approach to achieve the desired skills. Students showed confidence and gratitude as they learned in a new way. In summary, modifying the laboratory activity helped students acquire laboratory-related skills but presented challenges in using laboratory equipment. This suggests that Home Discovery can be considered a hybrid approach to learning biochemistry.

**Keywords:** biochemistry education, COVID-19, home discovery

- Heng, Z. S., Koh, D. W., Yeo, J. Y., Ooi, C., & Gan, S. K. (2022, May 27). Effects of different delivery modes on teaching biomedical science practical skills in higher education during the 2021 pandemic measures. *Biochemistry and Molecular Biology Education*, 50(4), 403–413. <https://doi.org/10.1002/bmb.21637>

**Abstract:** The COVID-19 pandemic related measures had augmented the rise of online education. While online teaching had mitigated the negative impacts from educational institutional closures, it was unable to displace hands-on biomedical laboratory practical lessons effectively. Without practical sessions, there was concern over the imparting of laboratory skills even with video demonstrations. To investigate the effectiveness of different delivery modes in imparting laboratory skills, theoretical and practical student assessments were analyzed alongside an anonymous survey on their motivation and prior experience. The undergraduate students were exposed to (1) instructor-live demonstration; (2) video demonstration or (3) no demonstration prior to the practical test which was a plasmid extraction. Significantly higher mini-prep yields and purity were found for both instructor-live and video demonstrations compared to no demonstration. Comparison with pre-pandemic theoretical assessment performance showed no significant differences despite longer contact hours during pre-pandemic times. Prior lab experience and motivation for selecting the course did not significantly affect student mini-prep yields. In conclusion, our findings suggest that video demonstrations were as effective as instructor-live demonstrations during the pandemic without noticeably compromising the teaching and learning of biomedical laboratory skills.

**Keywords:** contact hours, lab demonstration, laboratory skills, mini-prep, visual learning

- Wang, J., Zhang, Y., Xia, T., Ge, Y., Chen, L., Han, Y., Sun, Y., & Du, J. (2022, June 21). International student perceptions of online medical education during the COVID-19 epidemic. *Biochemistry and Molecular Biology Education*, 50(4), 414–420. <https://doi.org/10.1002/bmb.21641>

**Abstract:** This study aimed to investigate how international students enrolled on medical and surgical bachelor's degree programs (MBBS) in China perceived online medical education course, compared to native Chinese students during the Covid-19 pandemic. The perceptions of 38 MBBS and 31 Chinese sophomores were surveyed using the Chaoxing platform. The international student group's mean satisfaction with online teaching was 2.737 on a 5-point scale, much lower than the Chinese students' mean score of 4.355 ( $p < 0.05$ ). Similarly, the international students expressed less satisfaction than the Chinese learners with other aspects of the course, including the teacher's level, at  $3.964 \pm 0.818$  versus  $4.445 \pm 0.548$  ( $p < 0.05$ ); curriculum organization, at  $3.651 \pm 0.848$  versus  $4.333 \pm 0.568$  ( $p < 0.05$ ); and self-learning level, at  $3.634 \pm 0.996$  versus  $3.686 \pm 0.949$  ( $p > 0.05$ ), respectively. There were also noteworthy differences between the progress made by the international students in Chinese language learning, which was positively correlated with satisfaction with teaching on the online medical education ( $p < 0.05$ ). The results suggest that, while online teaching was a necessary response to the Covid-19 pandemic, satisfaction with this mode of education is lower among international students than their Chinese counterparts.

**Keywords:** Chinese student, COVID-19 epidemic, international student, online teaching practice

## BRITISH JOURNAL OF SPECIAL EDUCATION

1. Hellowell, B., Smith, S., & Wharton, J. (2022, May 10). ‘What was required above all else was collaboration’: keeping the momentum for SEND partnership working in the wake of Covid-19. *British Journal of Special Education*, 49(2), 148–167. <https://doi.org/10.1111/1467-8578.12413>

**Abstract:** This article considers implications for partnership working across the Special Educational Needs and Disabilities (SEND) system in England, at a time when a long-overdue SEND Review is imminent and the SEND Code of Practice 2015 is awaiting a significant overhaul. It highlights the role local policy actors occupy within this system, as the progression of the Covid-19 pandemic moves SEND partnerships towards a ‘new normal’ and there is heightened concern about missed opportunities for reform and renewal. Previously published findings from an online questionnaire (n = 100) undertaken by the Special Educational Needs Policy Research Forum provided insight into how school staff had been supported in the teaching of pupils with SEND during periods of school closures and what lessons had been learned. The present article offers a thematic analysis of the narrative responses provided in addition to the closed survey questions. The analysis generated six statements that can be understood as lessons learned from the pandemic for partnership working, drawing on the experiences of parents, school staff, and advising professionals working in local authorities.

**Keywords:** SEND partnership, inclusion, policy actors, learning partnerships, co-construction

2. Code, A., Fox, L., Asbury, K., & Toseeb, U. (2022, April 28). How did autistic children, and their parents, experience school transition during the Covid-19 pandemic? *British Journal of Special Education*, 49(2), 168–189. <https://doi.org/10.1111/1467-8578.12414>

**Abstract:** Due to the Covid-19 pandemic, the start of the academic year in September 2020 was a unique time for those transitioning to a new school. This study aimed to explore the experiences of parents who supported autistic children making a range of different school transitions in 2020. Semi-structured interviews were carried out with 13 parents of autistic children in the UK, and data were analyzed with reflexive thematic analysis. For some parents, the Covid-19 pandemic negatively impacted on aspects of school transitions. However, other parents expressed the view that these same circumstances created opportunities to approach the school transition in a unique, improved manner. This article sheds light on the heterogeneity of experiences and perceptions of parents of autistic children, and highlights the need to examine the impact of Covid-19 on school transitions, including practices that it may be advantageous to retain.

**Keywords:** autism, school transition, Covid-19, reflexive thematic analysis, qualitative research

3. Hipkiss, A., & Woods, K. A. (2022, March 6). Using Activity Theory to explore the management of General Certificate of Education (GCSE) access arrangements. *British Journal of Special Education*, 49(2), 190–208. <https://doi.org/10.1111/1467-8578.12404>

**Abstract:** Access arrangements are the way in which awarding bodies for public examinations in England, such as the General Certificate of Secondary Education, make reasonable adjustments for students with special educational needs and disabilities. SENCos have expressed concerns about the onerous nature of managing requirements for access arrangements, both administratively and practically, but there has been little explanation of why an apparently straightforward process proves so challenging. In this study, the development of a whole-school system to improve the administrative and practical management of access arrangements is used to seek to understand how the requirements set (and re-set) annually interact with school systems and processes to render the administration of access arrangements potentially complex, time-consuming and unpredictable. Scotland's flexible, school-led framework of requirements for the management of public examination assessment arrangements is highlighted as potentially more fit-for-purpose for the organisation of statutory reasonable adjustments for educational assessment.

**Keywords:** school systems, Activity Theory, management, examinations

4. Baumbusch, J., & Lloyd, J. E. V. (2022, February 25). Research priority setting with parents of students with learning exceptionalities and disabilities. *British Journal of Special Education*, 49(2), 209–229. <https://doi.org/10.1111/1467-8578.12405>

**Abstract:** With an increasing focus on knowledge mobilisation, there is a concomitant shift in how stakeholders, such as parents, ought to be engaged in the research process. The purpose of this study was to explore the research priorities of parents of Kindergarten to Grade 12 students with learning exceptionalities and disabilities in British Columbia, Canada. A cross-sectional survey design was employed. A convenience sample of 130 parents completed the survey. From a list of pre-selected variables, parents identified time to initial designation, high school graduation, and home-schooling/independent schooling as the three most important research priorities, with learning disabilities, autism spectrum disorder, and moderate behaviour support/mental illness as the three most important designations. In an open-ended response, parents recommended further areas for inquiry, including the effectiveness of inclusive education and school exclusion. Research priority setting can help create research agendas that align with the needs and interests of stakeholders.

**Keywords:** knowledge mobilization, parents, inclusive education, research priority setting

5. Layes, S., & Bouakkaz, T. (2022, February 21). Predicting word and pseudoword reading in Arabic-speaking children: the independent contributions of phonological and morphological awareness and visual attention. *British Journal of Special Education*, 49(2), 230–260. <https://doi.org/10.1111/1467-8578.12403>

**Abstract:** The present study explored whether phonological awareness (PA), morphological awareness (MA) and visual attention (VA) independently predict word and pseudoword reading accuracy in native Arabic-speaking children from grades 4 and 5. A total of 141 participants took part in the study, and were divided into two groups of readers with (n = 30) and without (n = 111) dyslexia. PA was measured with orally administered syllable manipulation and deletion tasks. The MA task targeted the dismantling of composite Arabic words into meaningful parts in oral modality. VA was assessed by objects and letters cancellation tasks. The results showed that the two groups differed significantly in all of the measures. The regression analysis output showed that VA emerged as a significant predictor of word and pseudoword reading beyond the predictive role of PA and MA. These results have implications for the understanding of the underlying factors of word and pseudoword reading development in Arabic.

**Keywords:** word and pseudoword reading, phonological awareness, morphological awareness, visual attention

6. McCandless, S., & Hoerger, M. (2022, February 24). Cost-effective models for delivering behaviour analysis teaching in UK schools and local authorities. *British Journal of Special Education*, 49(2), 261–275. <https://doi.org/10.1111/1467-8578.12399>

**Abstract:** Education programmes based on behaviour analysis are often used to teach children with learning disabilities. A common application of behaviour analysis is Early Intensive Behaviour Intervention (EIBI), which is evidence-based, but most children in the UK do not have access to this approach. EIBI is usually implemented for 30 to 40 hours per week, over two years. High levels of supervision from behaviour analysts are essential to ensure EIBI's effectiveness. A recent cost-effectiveness study concluded that EIBI was not cost-effective: while the children make progress relative to treatment as usual, the outcomes did not justify the cost of the intervention. Other low-cost models of delivery need to be considered. School-based models used in the UK may provide cost-effective and sustainable ways to use applied behaviour analysis in schools. They could be used in other local authorities to increase access to an education that includes behaviour analysis.

**Keywords:** applied behavior analysis, autism, cost-effectiveness, intellectual disability

7. Barwasser, A., Nobel, K., & Grünke, M. (2022, March 14). Peer-reading racetracks for

word reading of low-achieving graduating students with learning disabilities and behavioural problems. *British Journal of Special Education*, 49(2), 276–298. <https://doi.org/10.1111/1467-8578.12407>

**Abstract:** The number of students with reading difficulties is increasing and reading motivation is decreasing. Although serious reading problems can still persist during secondary education, most reading instruction happens in primary schools. In particular, students with learning disabilities and externalising behavioural problems are confronted with hurdles in reading literacy that need to be overcome. For this reason, this study focused on a simple reading intervention to promote sight vocabulary in 10th grade readers with learning disabilities and behavioural problems. A peer-tutored motivational reading racetrack intervention was implemented three times a week over a five-week period through a multiple baseline design across participants in three small groups. The results indicate that the combined intervention is an appropriate method to help students, even those in a graduating class, to improve their sight words in a short period of time, and thus provide them with important reading skills.

**Keywords:** racetracks, sight words, peer-tutoring, at-risk factors, secondary education

## CAMBRIDGE JOURNAL OF EDUCATION

1. Oldfield, J., & Ainsworth, S. (2021, December 22). Decentring the ‘resilient teacher’: exploring interactions between individuals and their social ecologies. *Cambridge Journal of Education*, 52(4), 409–430. <https://doi.org/10.1080/0305764x.2021.2011139>

**Abstract:** The teacher retention crisis has led to a strong discourse around the need for teachers to ‘build their resilience’, which places the responsibility for coping at the feet of the individual teacher. Contemporary research, however, supports a social-ecological approach, which takes account of environmental influences within the resilience process. This study draws upon five focus groups (28 teachers) to present evidence for complex interdependencies between risk and protective factors within the resilience process. The authors demonstrate the prevalence of indirect (mediation and moderation) effects operating primarily *between* rather than *within* ecological levels, characterised by contextual factors predominately influencing individual factors, rather than the other way round. These findings provide support for the notion of equifinality – the idea that there are multiple routes to resilience – and advocate a flexible approach to promoting teacher resilience, involving experimentation and collaboration across ecological levels.

**Keywords:** Resilience; teachers; interactions; social-ecological; mediation; moderation

2. Mackley, H., Edwards, S., Mclean, K., & Cinelli, R. (2022, April 3). Building collaborative competencies through play with outdoor loose parts materials in primary school. *Cambridge Journal of Education*, 52(4), 431–451. <https://doi.org/10.1080/0305764x.2022.2030300>

**Abstract:** This paper reports on the findings from a study investigating the provision of outdoor loose parts materials for upper primary school aged children. Conducted in Queensland, Australia, the study focused on loose parts materials as cultural tools, following the sociocultural argument that tools mediate activity and outcomes. The findings suggest that loose parts materials are used by children in the formation of sociodramatic play, including episodes of trading, bartering and advertising that support their shared understandings. Shared understandings precede collaborative competencies, including engagements with others, working towards and achieving common goals. With collaboration recognised as an important learning disposition for children in twenty-first-century societies, the findings suggest loose parts materials may be pedagogically appropriate for supporting these competencies in primary school settings.

**Keywords:** Loose parts materials; play; collaboration; primary school

3. Graham, A., Anderson, D., Truscott, J., Simmons, C., Thomas, N. P., Cashmore, J., & Bessell, S. (2022, March 6). Exploring the associations between student participation, wellbeing and recognition at school. *Cambridge Journal of Education*, 52(4), 453–472. <https://doi.org/10.1080/0305764x.2022.2031886>

**Abstract:** Children’s right to participate, at least in rhetoric, is well recognised, but what this means and the associated benefits in schools are less clear. This article synthesises findings of a large mixed-methods Australian study comprising policy analysis, qualitative interviews with students, teachers and policymakers, and the development of a Student Participation Scale, which was then used in a student survey to explore associations between participation and wellbeing. The study found that particular elements of participation (choice, influence and working together – but not ‘voice’) were strongly associated with greater wellbeing, both as a direct link and one mediated by intersubjective ‘recognition’ (relationships founded on reciprocal respect, valuing and care of others). The findings have considerable implications for both policy and practice in clarifying how participation is understood, practised and progressed in different ‘spaces’ in schools, as well as identifying the cultural conditions necessary for simultaneously fostering both participation *and* wellbeing.

**Keywords:** student wellbeing; participation; voice; relationships; recognition theory

4. Øvereng, L. K. B., & Gamlem, S. M. (2022, March 1). Mapping the quality of teacher–pupil interactions in lessons with and without the use of tablets during a typical school day in first grade. *Cambridge Journal of Education*, 52(4), 473–493. <https://doi.org/10.1080/0305764x.2022.2031885>

**Abstract:** The quality of teacher–pupil interactions is important for pupils’ learning and engagement, and teachers play an important role in facilitating learning. Tablets are often used in primary education. This study evaluated the quality of teacher–pupil interactions during first-grade lessons, with and without tablets, during a typical school day across 18 classrooms. The Classroom Assessment Scoring System® K-3 was used to assess the quality of the interactions, and the utilisation of tablets was coded using time sampling. Overall, the quality of teacher–pupil interactions for the domains of *emotional support* and *classroom organisation* were high, in contrast to the domain *instructional support*, which was low in quality. The quality of teacher–pupil interactions was generally consistent throughout the day; a small difference was identified where the quality was slightly lower for a *positive climate, regard for student perspectives* and *language modelling* in lessons with tablets, compared to those without.

**Keywords:** Tablets; primary school; literacy practices; teacher-pupil interactions; systematic observation; CLASS

5. Waddington, J. (2022, March 27). 'We are people, you know': children's views on the use of video recordings in the EFL class. *Cambridge Journal of Education*, 52(4), 495–517. <https://doi.org/10.1080/0305764x.2022.2040953>

**Abstract:** A study is presented with a twofold objective related to child voice: to explore children's views on the use of video recordings in an EFL (English as a Foreign Language) class, and to promote the inclusion of child voice in decision-making processes in the foreign language classroom. The study was carried out in a primary school setting in Catalonia over a three-year period. Data was collected and analysed within an interpretative phenomenological approach, adopting an ethically symmetrical approach to children as research participants. Findings suggest that video recordings can be a useful classroom resource to encourage self-reflection, but that camera presence and subsequent self-viewing can provoke strong emotional reactions and generate overly critical and potentially debilitating attitudes to language learning. Child voice contributions provide insightful ideas to use video recordings strategically and ethically, while also raising important questions about children's rights to privacy and data protection, and to express their views using their L1 in the EFL class.

**Keywords:** Child voice; children's rights; English-only policies; use of L1; inclusion; social justice

6. Bhowmik, M. K., & Kennedy, K. J. (2022, March 23). Reconceptualization of support and policy for minoritised students with dis/abilities in Hong Kong. *Cambridge Journal of Education*, 52(4), 519–537. <https://doi.org/10.1080/0305764x.2022.2040952>

**Abstract:** Minoritised students with dis/abilities in Hong Kong may face aggregated challenges. As a minoritised student with dis/ability or impairment, they may be doubly marginalised or triply marginalised, as in the case of a female or poor minoritised student with dis/ability or impairment. Little is known, however, about these students or about the underpinning philosophies of existing support. Adopting an intersectionality approach and dis/ability critical race theory (DisCrit), this paper explores the educational provision and existing support measures for minoritised students with dis/abilities and the issues and challenges faced by them. It draws on various policy documents from related government departments and others. The paper presents three theoretical arguments: (1) that dis/ability discourse needs to be more inclusive; (2) that the medical model currently provides limited support for minoritised students with dis/abilities in Hong Kong; and (3) that a social model, rather than the current medical model would provide inclusive support.

**Keywords:** Minoritised students; medical model of dis/ability; social model of dis/ability; dis/ability critical race theory (DisCrit); diversity; equity and inclusion; Hong Kong

## COGNITIVE PSYCHOLOGY

1. McMaster, J. M., Tomić, I., Schneegans, S., & Bays, P. M. (2022, September). Swap errors in visual working memory are fully explained by cue-feature variability. *Cognitive Psychology*, 137, 101493. <https://doi.org/10.1016/j.cogpsych.2022.101493>

**Abstract:** In cue-based recall from working memory, incorrectly reporting features of an uncued item may be referred to as a “swap” error. One account of these errors ascribes them to variability in memory for the cue features leading to erroneous selection of a non-target item, especially if it is similar to the target in the cue-feature dimension. However, alternative accounts of swap errors include cue-independent misbinding, and strategic guessing when the cued item is not in memory. Here we investigated the cause of swap errors by manipulating the variability with which either cue or report features (orientations in Exp 1; motion directions in Exp 2) were encoded. We found that swap errors increased with increasing variability in memory for the cue features, and their changing frequency could be quantitatively predicted based on recall variability when the same feature was used for report. These results are inconsistent with the hypothesis that swaps are a strategic response to forgotten items, and suggest that swap errors could be wholly accounted for by confusions due to cue-dimension variability. In a third experiment we examined whether spatial configuration of memory arrays in tasks with spatial cueing has an influence on swap error frequency. We observed a specific tendency to make swap errors to non-targets located precisely opposite to the cued location, suggesting that stimulus positions are partially encoded in a non-metric format.

**Keywords:** Swap error; Intrusion error; Visual working memory; Short-term memory; Feature binding; Cued recall

2. Fränken, J. P., Theodoropoulos, N. C., & Bramley, N. R. (2022, September). Algorithms of adaptation in inductive inference. *Cognitive Psychology*, 137, 101506. <https://doi.org/10.1016/j.cogpsych.2022.101506>

**Abstract:** We investigate the idea that human concept inference utilizes local adaptive search within a compositional mental theory space. To explore this, we study human judgments in a challenging task that involves actively gathering evidence about a symbolic rule governing the behavior of a simulated environment. Participants learn by performing mini-experiments before making generalizations and explicit guesses about a hidden rule. They then collect additional evidence themselves (Experiment 1) or observe evidence gathered by someone else (Experiment 2) before revising their own generalizations and guesses. In each case, we focus on the relationship between participants’ *initial* and *revised* guesses about the hidden rule concept. We find an order effect whereby revised guesses are anchored to idiosyncratic elements of the earlier guess. To explain this pattern, we develop a family of process accounts that combine program induction ideas with

local (MCMC-like) adaptation mechanisms. A particularly local variant of this adaptive account captures participants' hypothesis revisions better than a range of alternative explanations. We take this as suggestive that people deal with the inherent complexity of concept inference partly through use of local adaptive search in a latent compositional theory space.

**Keywords:** Concept learning; Program induction; Language of thought; Adaptive search; Markov chain Monte Carlo

3. Gorman, T. E., & Goldstone, R. L. (2022, September). An instance-based model account of the benefits of varied practice in visuomotor skill. *Cognitive Psychology*, 137, 101491. <https://doi.org/10.1016/j.cogpsych.2022.101491>

**Abstract:** Exposing learners to variability during training has been demonstrated to improve performance in subsequent transfer testing. Such variability benefits are often accounted for by assuming that learners are developing some general task schema or structure. However much of this research has neglected to account for differences in similarity between varied and constant training conditions. In a between-groups manipulation, we trained participants on a simple projectile launching task, with either varied or constant conditions. We replicate previous findings showing a transfer advantage of varied over constant training. Furthermore, we show that a standard similarity model is insufficient to account for the benefits of variation, but, if the model is adjusted to assume that varied learners are tuned towards a broader generalization gradient, then a similarity-based model is sufficient to explain the observed benefits of variation. Our results therefore suggest that some variability benefits can be accommodated within instance-based models without positing the learning of some schemata or structure.

**Keywords:** Skill learning; Training variability; Generalization; Instance-models

## COMPUTERS & EDUCATION

1. Sikström, P., Valentini, C., Sivunen, A., & Kärkkäinen, T. (2022, October). How pedagogical agents communicate with students: A two-phase systematic review. *Computers & Education*, 188, 104564. <https://doi.org/10.1016/j.compedu.2022.104564>

**Abstract:** Technological advancements have improved the capabilities of pedagogical agents to communicate with students. However, an increased use of pedagogical agents in learning environments calls for a deeper understanding of student-agent communication to assess the effectiveness of pedagogical agents in learning. This study is a two-phase systematic review of scientific papers on pedagogical agent communication research published between 2010 and 2020, including review papers and original research papers. In the first phase, this study analyses literature reviews and meta-analyses to find the status and research gaps. The findings indicate that pedagogical agents' characteristics and impact on learning have been reviewed, but pedagogical agent communication and its relation to learning have not. In the second phase, the empirical studies of pedagogical agent communication are reviewed and classified into three categories that describe how pedagogical agent communication facilitates students' learning through (1) students' intrapersonal communication processes, (2) interpersonal communication between students and a pedagogical agent, and (3) by facilitating learning in a group. The findings show that pedagogical agent communication can enhance learning through intrapersonal communication of motivation, self-regulation, self-efficacy, and metacognition. At the interpersonal level, pedagogical agents aim to scaffold learning by giving feedback, prompts, and hints from learning processes and learning results. Pedagogical agents also support learning in a group by facilitating discussions and directing students' collaboration. Despite rapid technological advancements, pedagogical agents are not on the level to communicate fluently and human-like, which is likely to reduce their effectiveness and usability in learning. The review concludes that pedagogical agents' communication needs to be developed toward adaptive, adequate, relational, and logical communication, which requires a multidisciplinary theoretical approach, the use of artificial intelligence, affective computing, and psychometric assessments. Recommendations for future research addressing the gaps identified in this systematic review are discussed.

**Keywords:** Pedagogical agent; Student-agent communication; Human-machine communication; Systematic literature review; Umbrella review

2. Guggemos, J., Moser, L., & Seufert, S. (2022, October). Learners don't know best: Shedding light on the phenomenon of the K-12 MOOC in the context of information literacy. *Computers & Education*, 188, 104552. <https://doi.org/10.1016/j.compedu.2022.104552>

**Abstract:** Massive Open Online Courses (MOOCs) have received much attention in higher education; however, evidence about MOOCs at the K-12 level is scarce. To shed light on the phenomenon, we use the i-MOOC that aims at fostering upper secondary

level students' information literacy. The i-MOOC is a blended MOOC developed and refined in a design research process; it meets established criteria for high-quality MOOCs. In 2020, 1032 upper secondary level students in German-speaking Switzerland took the i-MOOC; the sample comprises  $N = 167$  students who voluntarily filled in a questionnaire. The students are mainly from high schools and vocational schools. Learning effects are captured with a performance test. Information literacy gains are significant and medium in size:  $d = 0.75$ . The technology acceptance of students is evaluated using the extended unified theory of acceptance and use of technology (UTAUT2). Student technology acceptance of K-12 MOOCs is primarily driven by hedonic motivation, i.e., perceived fun and entertainment. However, this type of motivation negatively predicts learning gains. Implications for teachers and educational decision makers are discussed.

**Keywords:** K-12 MOOC; Blended MOOC; Upper secondary level education; Technology acceptance; Learning effects

3. Ferede, B., Elen, J., Petegem, W. V., Hunde, A. B., & Goeman, K. (2022, October). A structural equation model for determinants of instructors' educational ICT use in higher education in developing countries: Evidence from Ethiopia. *Computers & Education*, 188, 104566. <https://doi.org/10.1016/j.compedu.2022.104566>

**Abstract:** In recent years, there has been greater interest and commitment in developing countries to transform their higher education (HE) using ICT. Evidence shows that ICT is underutilized by instructors in these countries. However, a rigorous context-specific model which explains this observation is currently lacking. In this large-scale study, the causal relationships among institutional and individual determinants of HE instructors' ICT use were examined in order to develop a parsimonious model. Survey data were collected from 946 instructors who were randomly selected from six Ethiopian public universities. The results of the structural equation modeling analysis indicated that solely instructors' ICT competence and ICT attitude have a direct impact on their ICT use. The study did not find support for the hypothesized direct impacts of ICT vision and plan, professional development, support, and infrastructure on ICT use. The findings of the current study imply that in developing countries, instructors' ICT use may be improved by intervening in their professional development. Future researches need to focus on designing and assessing professional development interventions that empower instructors with ICT competence and attitude.

**Keywords:** Media in education; Cultural and social implications; Improving classroom teaching; Structural equation model; Post-secondary education

4. Nazare, J., Woolf, A., Sysoev, I., Ballinger, S., Saveski, M., Walker, M., & Roy, D. (2022, October). Technology-assisted coaching can increase engagement with learning technology at home and caregivers' awareness of it. *Computers & Education*, 188, 104565. <https://doi.org/10.1016/j.compedu.2022.104565>

**Abstract:** While digital technologies are typically used to support established educational roles, they can also enable new roles, providing guidance for learners at previously inaccessible points in the learning process (e.g., at home, on-the-go). This work presents one such role — a technology-assisted human coach — that relies on digital technology to offer a personally-tailored learning experience where children can engage in self-motivated, personally meaningful exploration at home using mobile literacy apps and coaches can scaffold children's learning asynchronously based on their play data. To investigate the feasibility and effectiveness of this virtual coaching role, we created two instantiations of a coaching system using open-ended literacy apps. We conducted a randomized controlled trial and a formative study. We found that it is feasible for a novel computer system to assist a human coach in analyzing and supporting children's learning and discussing progress with caregivers to help them co-engage. Our analysis shows that coaches successfully fulfilled their role as designed, and that the coaching system was effective in increasing caregivers' awareness of their children's in-app play and playtime with the literacy app, but not in increasing the variety of words children made. Furthermore, we found that for families with lower formal education levels, the effects of the coaching system were significantly stronger across almost all outcomes investigated. Considering these findings, we contribute guidance on how to create new roles in children's learning enabled by data-driven systems that can reach learners at a traditionally difficult-to-access part of the learning process and support self-motivated learning.

**Keywords:** Distance education and online learning; Mobile learning; Cooperative/collaborative learning; Early years education; Architecture for Educational technology system

5. Bergdahl, N. (2022, October). Engagement and disengagement in online learning. *Computers & Education, 188*, 104561. <https://doi.org/10.1016/j.compedu.2022.104561>

**Abstract:** It can be challenging for teachers to engage students online; to know whether students are engaged or not. Online engagement can be perceived differently than in-class engagement. Research has shown that teacher perceptions of student engagement affect how they interact with students as well as students' grades. It is critical to understand how teachers perceive engagement, not least in an online setting, to inform practices and research. This study explores Swedish teachers' understanding of student online engagement and disengagement. A Mixed Method Grounded Theory study was designed as an intervention with an interview-diary-interview format. Twenty interviews with teachers (n = 10) who regularly teach hybrid, remote or distance classes in K-12 education were analysed using descriptive statistics and content analysis. The results show that teachers express understanding at the macro and micro level of engagement and would report different combinations of engagement and disengagement at different levels of engagement. The results informed an engagement model with a complex construct without inherent boundaries; teachers rated student engagement both below and above the suggested scale. The contribution to theory with included models is discussed.

**Keywords:** Distance education; Remote education; Online learning; K-12; Engagement; Disengagement; MMGT

6. Alemdag, E., & Yildirim, Z. (2022, October). Effectiveness of online regulation scaffolds on peer feedback provision and uptake: A mixed methods study. *Computers & Education*, 188, 104574. <https://doi.org/10.1016/j.compedu.2022.104574>

**Abstract:** Providing quality peer feedback and processing and using the received feedback are cognitively challenging activities of formative peer assessment (FPA) for students. The use of technological tools involving theoretically-grounded instructional scaffolds can be one promising solution to support these activities. Accordingly, this mixed methods research utilized scaffolds in an online environment that can activate self-regulated and co-regulated learning during FPA and investigated their impact on peer feedback provision and uptake. It included 70 ninth-grade students assigned into two groups to perform FPA activities for two writing tasks either with online regulation scaffolds (ORS) or without them. Using a new online FPA environment developed by the authors, they composed a story and poem in the first and second writing tasks, respectively. Results regarding peer feedback provision revealed that feedback in the group using ORS was briefer in two writing tasks, but it had significantly higher quality in the first writing task. In terms of feedback uptake, ORS led to more likelihood of reading peer feedback in the first writing task, but the percentage of students revising their performance was similar independent of ORS. Students' experiences highlighted the role of feedback requests and goal setting and planning. Besides ORS, qualitative results called attention to the influence of task, learner, and feedback characteristics. Overall, this study concludes that ORS can be beneficial for improving peer feedback provision and uptake, especially in the first FPA practices for complex performance tasks. Moreover, it contributes to the development of the FPA model and guides the instructional design of online FPA environments with empirical evidence.

**Keywords:** Pedagogical issues; Teaching/learning strategies; Cooperative/collaborative learning; Secondary education

## CURRICULUM INQUIRY

1. Hamzeh, M., & Flores Carmona, J. (2022, May 27). Critical reflexión and plática~testimonio/haki~shahadat: Enacting decolonial praxis of solidarity from the Mexico-US borders to Palestine. *Curriculum Inquiry*, 52(3), 266–274. <https://doi.org/10.1080/03626784.2022.2072667>

**Abstract:** In this plática, we share how we have deployed the methodologies of critical reflexión and plática ~ testimonio/haki ~ shahadat, which helped us enact a decolonial praxis of solidarity with intentional acts that grounded us in border thinking and opened the possibilities of creating an otherwise of love and harmony. We illustrate a praxis of solidarity stemming from our negotiation of differences, experiences of each other/beside each other in different moments and different sites of resistance inside and outside academia. Part of this praxis is exemplified in our co-femtoring other colleagues, faculty, and graduate students of Color and co-teaching/co-creating digital testimonios in the classroom. We also illustrate an interdependent solidarity collaborating in a US Hispanic Serving Institution on Mexico-US borders and in Cairo, Egypt and co-teaching/co-learning Palestine historically and at another moment of genocide. Inside and outside academia, we do our solidarity expansively, in purposeful, reciprocal, interdependent ways.

**Keywords:** Testimonio/shahadat; haki/plática; critical reflexión; decolonial praxis; solidarity

2. Brant, J., & Webber, K. (2022, May 27). Hood-in-g the ivory tower: Centring Black, Indigenous, and Afro-Indigenous feminist solidarities. *Curriculum Inquiry*, 52(3), 275–288. <https://doi.org/10.1080/03626784.2022.2072673>

**Abstract:** We begin this essay by sharing a bit about our entry points into Black, Indigenous, and Afro-Indigenous feminist solidarities before entering into conversation with Mikki Kendall whose work *Hood Feminisms: Notes from the Women that a Movement Forgot* inspired the title for this essay and offers important insights for Black and Indigenous feminist solidarities. Kendall’s words, alongside those of Monture-Angus, highlight the unique experiences that inspire many Black and Indigenous women on their journeys’ to university. Our work seeks to identify the tensions of “hood-in-g the ivory tower” in several ways. First, we weave in personal narrative to offer a reflection of what it means to engage in academic spaces from the hood. In this way, we explain what it means to literally bring the hood into the ivory tower. Second, we document the genealogies of feminist writings that shape our work. Third, by drawing on the sentiments of the “Hooding Ceremony” we present lessons to assert what it means to support our Lively-Hood within academic spaces. To document our understanding of Black, Indigenous, and Afro-Indigenous feminist solidarities, we will elaborate on the concept of “hood-in-g the ivory” throughout the article by offering reflections of our individual and shared positionalities in relation to activist practices in and out of classrooms.

**Keywords:** Black; Indigenous and Afro-Indigenous feminisms

3. Desai, C., & Ziadah, R. (2022, May 27). *Lotus* and its afterlives: Memory, pedagogy and anticolonial solidarity. *Curriculum Inquiry*, 52(3), 289–301. <https://doi.org/10.1080/03626784.2022.2072670>

**Abstract:** In this article we examine the *Lotus: Afro-Asian Writings* journal as an insurgent space that reflected Afro-Asian solidarity. We argue that *Lotus* constituted “infrastructures of dissent” and “infrastructures of solidarity” which were constructed between different anti-colonial movements. Though *Lotus* was widely circulated through different geographies, debated and discussed, there remains very little scholarly attention around its origins, impact, and the forms of solidarity it aspired to engender. There have been a number of studies on the “Bandung Spirit” and the “Tricontinental” conferences, yet there is generally less attention to the networks of artists, authors, exhibits, and magazines that discussed and debated forging insurgent solidarities under difficult circumstances. The article thus explores how cultural production was used by Afro-Asian artists to enact “creative solidarity” and the ways *Lotus* provided a means for cultural producers to share knowledge, theorize, and build relations across anti-colonial struggles, albeit in a space not outside the political dynamics and contradictions of the moment. We also conceptualize *Lotus* as an anti-colonial archive and suggest that such archives can be used pedagogically in efforts to decolonize curriculum, through a histories from below approach, to remember those occluded from history.

**Keywords:** Anti-colonial archives; Afro-Asian solidarity; *Lotus* journal; decolonizing curriculum; cultural resistance; Palestine

4. Darokar, S. S., & Bodhi, S. R. (2022, May 27). The Dalit curriculum from two perspectives. *Curriculum Inquiry*, 52(3), 302–313. <https://doi.org/10.1080/03626784.2022.2072671>

**Abstract:** This article is an attempt by two educators, one Dalit and one Tribal, to make a case for why education in India needs to be informed by a conception of “the Dalit curriculum.” We argue that the Dalit curriculum is an educational theory based on the following foundational assumption: The Dalit reality is the denominator of measuring any knowledge that can be considered within the bounds of morality with real potential for social transformation in India. In developing this educational framework, both of us draw upon and embody a “curriculum of solidarity” that is inherent in the Ambedkarite perspective, which we both espouse. This article is comprised of four sections. The first expresses our socio-historical location as co-authors of the text. The second explains the context of solidarity between Dalits and Tribes. The third historicizes the Dalit curriculum from an Ambedkarite perspective and the fourth constitutes a dialogical reflection on the same from a Tribal perspective.

**Keywords:** Ambedkar; Dalit curriculum; epistemicide; axiocide; tribes

5. Eidoo, S., El-Abdallah, M., Grant, Z., & Machado, G. M. (2022, May 27). Memories and visions of ummah: Reflections in relational solidarity. *Curriculum Inquiry*, 52(3), 314–325. <https://doi.org/10.1080/03626784.2022.2072668>

**Abstract:** We are four racialized diasporic Muslim women living on Turtle Island, with roots spanning India, Palestine, Panama, Trinidad, Malaysia, and beyond. We have been involved in activism and organizing, including with and for Muslim communities, for more than five decades combined. Our conversations and correspondence about Muslim pedagogies of solidarity provoked individual and collective reflection about what it means to create and sustain community. We were made in community and have made communities intentionally with others, Muslim or otherwise, who allow us to be more fully human. We are guided by Islamic teachings, as well teachings of justice and liberation rooted in different knowledge traditions. We are shaped too by the knowledge and ways of knowing offered by radical Black, Indigenous, and People of Colour engaged in the collective struggle for freedom on Turtle Island and in the wider world. As Muslims, we are called “to come to know one another” (Qur’an, 49:13, as cited in Nasr et al., 2015). We suggest that to do so requires us to confront patterns of internalized domination and internalized subordination that prevent us from being with and for one another. Such confrontation enables us to work collectively to dismantle interlocking systems of oppression that prevent us from being more fully human. In this multivocal reflective essay, we explore the relationship between community and solidarity by delving into our memories of ummah, Muslim community, our evolving understandings of ummah, and the relational solidarity that is necessary to establish ummah. A thread that weaves together our memories and visions of ummah is the ancient and futuristic practice of mothering.

**Keywords:** Community; collective liberation; Islam; Muslims; solidarity

6. hampton, R., & Hartman, M. (2022, May 27). Solidarity in multiple registers. *Curriculum Inquiry*, 52(3), 326–336. <https://doi.org/10.1080/03626784.2022.2072672>

**Abstract:** This coauthored article is about building solidarity on Canadian university campuses. We construct a narrative in two registers—one justified left, one justified right—that traces our activism within and beyond the university and how our own solidarity has grown over time and informs our current research collaboration. On the one (left) hand, we describe how we as colleagues, comrades, and friends have come to work together in a shared political project across differences. On the other, we discuss how we have designed and are conducting our research. This polyvocal narration—collaborative, shifting between genres—enacts a radical Black feminist praxis, which informs both our decade-long collaboration and also the principles of the research project we have developed to examine Black student activism and coalition building. We close the article with a reflection on how graduate student researchers are collaborating on the project, their insights, and reflections they have shared with us.

**Keywords:** Black feminisms; Third World feminisms; student activism; solidarity; narrative methods

7. Santiago Ortiz, A., Navarro Pérez, A., Agosto Ortiz, P., Cruz González, C., & Román Oyola, M. (2022, May 27). “La solidaridad no perece”: Community organizing, political agency, and mutual aid in Puerto Rico. *Curriculum Inquiry*, 52(3), 337–350. <https://doi.org/10.1080/03626784.2022.2072669>

**Abstract:** In the wake of Hurricane Maria and in response to the negligent inefficiency of the local and federal governments, community groups and collectives, grassroots organizations, and activists of multiple causes began organizing under the principles of mutual aid and solidarity in Puerto Rico. One of these is the Colectivo Casco Urbano de Cayey (CCUC), a community organization comprised of local activists and community leaders, undergraduate students, and a professor. This essay brings together four members of the collective in a dialogue where they reflect on the central role of solidarity in the CCUC’s organizing and projects and the ways solidarity operates as a praxis of self-determination in the face of neoliberal austerity measures in Puerto Rico. We also highlight the relational work that was done prior to establishing the CCUC that enabled its creation. We also discuss how we negotiate our collaborative relationship across difference through critical dialogue and reflection, the challenges that arise because of our colonial subjectivities, and the ways we circumvent colonial logics through other ways of being and relating anchored in solidarity and interdependence.

**Keywords:** Action research; community-based learning; decolonization; participatory research; social justice education

8. Al-Shaikh, A. R. (2022, May 27). In solidarity with Birzeit: The black, the white, and the gray. *Curriculum Inquiry*, 52(3), 351–372. <https://doi.org/10.1080/03626784.2022.2082828>

**Abstract:** Birzeit University (BZU)—established in 1924 by the Nasir family—was born out of struggle and developed as a microcosm of the Palestinian national movement against the Zionist settler colonial state of Israel. This article explores specific moments of solidarity with BZU and beyond. I map out a genealogy of three modes of solidarity with Palestine analyzed in light of the political thought and praxis of Amilcar Cabral, Albert Camus, and Hannah Arendt. BZU has been an important and contested site for individual, collective, and universal solidarity initiatives, as gestures of solidarity have been made since 1974 and have continued since then, including the establishment of the Palestinian Campaign for the Academic and Cultural Boycott of Israel in 2004. In this article, I trace the shifting apathy, empathy, and sympathy expressed with the Palestinian struggle and BZU with a particular emphasis on initiatives by Jewish and Israeli intellectuals. Although this article is neither a chronology nor a moral taxonomy, it aims to produce an indigenious, de-orientalized, and de-colonized account of the meanings of solidarity with Palestine.

**Keywords:** Palestine; solidarity Birzeit University; Cabral; Camus; Arendt

9. Junaid, M., & Kanjwal, H. (2022, May 27). Contesting settler colonial logics in Kashmir as pedagogical praxis. *Curriculum Inquiry*, 52(3), 373–384. <https://doi.org/10.1080/03626784.2022.2072666>

**Abstract:** In the aftermath of the Indian government’s decision to change the status of Jammu and Kashmir on 5 August 2019, activism for the right to self-determination in Kashmir came under tremendous pressure. An intense crackdown in Kashmir, including a complete communication blackout and internet blockade, meant the only Kashmiri and dissenting voices left were located in diasporic spaces. As two Kashmiri scholar–activists involved in advocacy work on Kashmir, we examine the challenges of decolonial activism and transnational solidarity building, especially in Western academic spaces. For both of us, Kashmir has been a home and is a place where our scholarly ethos is entwined with intimate knowledge. While the diasporic/exilic location presents its own challenges of representation, the urgency imposed by the settler colonial logics that create existential questions for Kashmiris forces reconsiderations both of political alliance building as well as scholarly frameworks. In this article, we explore the emergent contours of a pedagogy of solidarity that centers Indigenous perspectives in relation to Kashmiri diasporic activism. We examine how our solidarity work takes shape in the neoliberal academy, grassroots progressive spaces, and transnational media.

**Keywords:** Decolonization; critical literacy; pedagogic praxis; settler colonial studies; solidarity

10. Flores, J., & Alfaro, A. R. (2022, May 27). Critical pedagogy: Loving and caring within and beyond the classroom. *Curriculum Inquiry*, 52(3), 385–396. <https://doi.org/10.1080/03626784.2022.2072665>

**Abstract:** Critical pedagogy scholars have described teaching as an act of love. This love is not a trivial emotion but a conscious action that demonstrates care, respect, honesty, listening, and solidarity. However, translating love and other principles of critical pedagogy into the classroom can be complex and painful. This article discusses our pedagogical experiences of love and care inside and outside classrooms. Our reflections on working in a juvenile detention center and a food justice mutual aid project show how understanding love, care, and solidarity as actions have been essential for working with our communities. At the same time, our experiences pose questions about the complexities and possibilities of loving and caring in precarious and totalitarian circumstances. We contribute to thinking about the application of critical pedagogy beyond school classrooms.

**Keywords:** Critical pedagogy; pedagogy of love; solidarity; detention centers; mutual aid

## ECONOMIC & POLITICAL WEEKLY

1. *From Sairat to Jhund via Jai Bhim : Caste and the Culture Industry of.* (2022, September 5). Economic and Political Weekly. Retrieved October 4, 2022, from <https://www.epw.in/journal/2022/36/alternative-standpoint/sairat-jhund-jai-bhim.html>

**Abstract:** Mainstream Indian cinema has rarely depicted the complexities of caste and its associated social problems. With *Fandry* (2014) and *Sairat* (2016), Nagraj Manjule brought caste and gender to the centre stage of film-making. However, his recent Hindi film *Jhund* fails to carry forward this legacy and adopts a time-tested Bollywood style—an upper-caste-male-saviour trope.

2. *FDI, GDP and Regional Disparity : An Empirical Study to Cross-check.* (2022, September 5). Economic and Political Weekly. Retrieved October 4, 2022, from <https://www.epw.in/journal/2022/36/commentary/fdi-gdp-and-regional-disparity.html>

**Abstract:** Foreign direct investment reveals the tendency to flow to the industrial agglomerates. Some scholars express the concern that the skewed distribution of FDI can worsen the regional disparity. This article reveals that FDI has limited and unexpectedly negative effects on the Indian gross domestic product. Hence, the fear that skewed FDI inflow can worsen regional disparity stands rejected.

3. *India's Turn to Save the World from the Next Crisis.* (2022, September 5). Economic and Political Weekly. Retrieved October 6, 2022, from <https://www.epw.in/journal/2022/36/commentary/indias-turn-save-world-next-crisis.html>

**Abstract:** A silent wave of financial stress is running through the world financial markets. India, the incoming G20 President, must provide the leadership necessary to save the world from an emerging market debt crisis. The proximate cause of the crisis is the combination of COVID-19 debt and a jump in the US dollar. Fighting the dollar's appreciation with higher interest rates on debt will push the world into recession. Faced with a rich-country commercial bank debt crisis in 2008, the G7 announced that they would use all the available tools and take all necessary steps to save the banks. We need to do the same today for countries. India should press the IMF to immediately increase access to its unconditional rapid financing facilities and temporarily suspend interest rate surcharges.

4. *Reading Ecology, Reinventing Democracy : The Gadgil Report on the.* (2022, September 5). Economic and Political Weekly. Retrieved October 6, 2022, from <https://www.epw.in/journal/2022/36/commentary/reading-ecology-reinventing-democracy.html>

**Abstract:** The Gadgil report on the Western Ghats is a major ecological tract and a significant reflection on the politics of ecology. It illustrates how a theory of nature, lives, livelihood combined with local knowledge, decentralisation, and diversity add to the dynamism of democracy. In contrast, the Kasturirangan report is an antidote to such

therapeutic ecology and shows how development creates the asymmetries of injustice and representation. The article explores the implications of these two different ways of reading ecology.

5. *Bhairabi Prasad Sahu (1957–2022)*. (2022, September 3). *Economic and Political Weekly*. Retrieved October 6, 2022, from <https://www.epw.in/journal/2022/36/commentary/bhairabi-prasad-sahu-1957%E2%80%932022.html>

**Abstract:** Bhairabi Prasad Sahu made path-breaking contributions to the study of the issues ranging from the history of regions, cultural aspects of the state, and legitimation strategies in premodern India to technology and social change. He also stood out for his consistent commitment to scientific historiography and the idea of public university.

6. *Agricultural Federalism : New Facts, Constitutional Vision*. (2022, September 14). *Economic and Political Weekly*. Retrieved October 6, 2022, from <https://www.epw.in/journal/2022/36/special-articles/agricultural-federalism.html>

**Abstract:** This paper argues for a reassessment of the distinct and complementary roles of the union and states in the agriculture sector in accord with the spirit of the Constitution. It then goes on to spell out five principles consistent with these distinct but complementary roles. Finally, the paper concludes by noting that achieving this vision would require the states and union to embrace the kind of cooperative federalism that led to the realization of the goods and services tax.

7. *Federal Transfers and States' Own Spending on Development Activities*. (2022, September 6). *Economic and Political Weekly*. Retrieved October 6, 2022, from <https://www.epw.in/journal/2022/36/special-articles/federal-transfers-and-states%E2%80%99-own-spending.html>

**Abstract:** Intergovernmental transfers play an instrumental role in shaping the fiscal adjustments and fiscal performance at the subnational level in a federal system like India. Research evidence bears out substitutive or stimulatory effects of federal transfers depending on the nature of transfers. Taking into account the conditional and unconditional transfers, this paper empirically verifies the presence of substitution or stimulation effects on the state-level development spending for 14 major states. The panel cross-sectional–autoregressive distributed lag model test results revealed the area- and sector-specific conditional transfers being stimulative in nature, encouraging states to complement central transfers using their own sources of revenue, while the same is absent for unconditional transfers. Besides, the paper brings out the influence of identity-politics, pre-election tactics, and tactical redistribution to enhance political mileage.

8. *Fiscal Decentralisation and Finances of Gram Panchayats and*. (2022, September 6). *Economic and Political Weekly*. Retrieved October 6, 2022, from <https://www.epw.in/journal/2022/36/special-articles/fiscal-decentralisation-and-finances-gram.html>

**Abstract:** Based on a sample of 56 gram panchayats and 14 municipalities, it is concluded that the fiscal decentralisation implemented in Kerala is partial. In the case of intergovernmental fiscal transfers through state finance commissions, there has been delayed implementation of SFC reports, rejection of devolution recommendations, implementation of very few recommendations and non-implementation of accepted recommendations indicating a distorted implementation of fiscal decentralisation.

9. *Another Global Debt Crisis*. (2022, September 13). Economic and Political Weekly. Retrieved October 6, 2022, from <https://www.epw.in/journal/2022/37/h-t-parekh-finance-column/another-global-debt-crisis.html>

**Abstract:** When multiple crises confront global leaders, some yet-brewing ones tend to be ignored. One such is an(other) imminent external debt crisis in developing countries, which, as in the case of the COVID-19 crisis, is likely to be prolonged with long-term spillovers. However, while most observers admit that another external debt crisis is imminent, a commitment to find a lasting solution is absent. Not because the elements of such a solution are not obvious. With the COVID-19 pandemic and the Ukraine invasion having made this round of the debt crisis even more difficult to resolve, there is little option but to resort to a package that includes official debt write-offs, large private creditor haircuts and the channelling of cheap liquidity to less developed countries through mechanisms like enhanced Special Drawing Rights issues.

10. *Needles, Blood, and Data : The Case of COVID-19 Vaccine Side Effects*. (2022, September 11). Economic and Political Weekly. Retrieved October 6, 2022, from <https://www.epw.in/journal/2022/37/commentary/needles-blood-and-data.html>

**Abstract:** That COVID-19 has been difficult on gender minorities has been well-documented. Through a combination of abandonment by the state, reluctance towards women's health beyond their reproductive capacity, and an epistemological gap at the heart of modern medicine, it is ensured that the effects of vaccines on women's menstrual cycles remain ignored.

11. *Regulating Creditors : Addressing the Next Frontier of Corporate*. (2022, September 11). Economic and Political Weekly. Retrieved October 6, 2022, from <https://www.epw.in/journal/2022/37/commentary/regulating-creditors.html>

**Abstract:** This article attempts to understand the limitations of the Insolvency and Bankruptcy Board of India's code of conduct. In the larger issue of balancing the interests of bankruptcy governance, it suggests structural reforms to the insolvency and bankruptcy code that aim to foster an expedient resolution process and reduce losses to creditors.

12. *Monetary Policy and Stagflation : Keynes Meets Classics*. (2022, September 11). Economic and Political Weekly. Retrieved October 6, 2022, from <https://www.epw.in/journal/2022/37/commentary/monetary-policy-and-stagflation.html>

**Abstract:** Monetary policies are traditionally viewed as having no direct effect on aggregate supply. This article argues that this view of neutrality of the supply side to

monetary policies may change if we pay more attention to the role of money supply on the working capital requirements of firms.

13. *Sri Lanka–China Relations : Analysing Sri Lankan, Chinese, and Indian*. (2022, September 11). Economic and Political Weekly. Retrieved October 6, 2022, from <https://www.epw.in/journal/2022/37/insight/sri-lanka%E2%80%93china-relations.html>

**Abstract:** The Sri Lankan, Indian, and Chinese perspectives on the growing strategic partnership between Sri Lanka and China are analysed. The motivations and objectives of India and China in strengthening their partnership with Sri Lanka are examined. The history of the Sri Lanka–China relationship and Chinese overtures to Sri Lanka in recent days is discussed. It is argued that given the geostrategic location of Sri Lanka in the Indian Ocean, and proximity to India, an aspiration for infrastructural developmental and Chinese developmental assistance are primarily shaping the Sri Lankan foreign policy choice to adopt hedging to maximise benefits.

14. *Dynamics of Government Budgets, Growth, and Welfare*. (2022, September 11). Economic and Political Weekly. Retrieved October 6, 2022, from <https://www.epw.in/journal/2022/37/special-articles/dynamics-government-budgets-growth%C2%A0and-welfare.html>

**Abstract:** The report of NITI Aayog titled “SDG India: Index and Dashboard 2020–21: Partnerships in the Decade of Action,” vividly portrays poorer states that lag behind the advanced states in the achievement of the sustainable development goals. This paper, which explores what hinders the effort of the poorer states in accessing resources from the centre and in reaching out to the poor, demonstrates that poorer states in India lag behind the less poor states in the implementation of development programmes, despite the fact that such programmes are conceived to offer opportunities to the poorer states to use central resources to augment their economic capacity in fighting deprivation and destitution. It also builds a model of public spending and tests the model with data using econometric methods. In addition, it applies the model to examine the question of low spending in poor states and offers concrete solutions. Using this model as a framework of analysis, governments can estimate the financial implications of structural reforms and stimulate their economies with welfare compatible allocation of resources.

15. *The Indian Time Use Survey 2019 : A Critique*. (2022, September 11). Economic and Political Weekly. Retrieved October 6, 2022, from <https://www.epw.in/journal/2022/37/special-articles/indian-time-use-survey-2019.html>

**Abstract:** The first all-India time use survey was conducted by the National Statistical Office in 2019. It covered 1,38,794 households—60% rural and 40% urban—and 4,47,250 persons above six years of age. This paper examines the concepts, methods, and quality of data used in the TUS 2019, the results of which throw light on the workforce, health and educational status of the population, and other dimensions of life. The status of TUSs in the global South and the challenges faced by the countries therein, as

well as how successful the NSO has been in facing these challenges in India are also discussed.

16. *What Does the COVID-19 Experience Tell Us about Indian Growth Drivers?* (2022, September 11). Economic and Political Weekly. Retrieved October 6, 2022, from <https://www.epw.in/journal/2022/37/special-articles/what-does-covid-19-experience-tell-us-about-indian.html>

**Abstract:** Parts of this paper were presented at SSS-AIU, Study Group and EGROW Foundation webinars, O P Jindal Finance Global Finance Conclave and Rajagiri Conference on Economics and Finance. Enthusiastic feedback helped improve it. In particular, the author thanks Charan Singh for the invitation to develop one of her op-eds, Arvind Virmani, Amartya Lahiri and an *EPW* referee for comments. The author would also like to thank Krishnandu Ghosh and Sandipan Saha for research assistance and Shreeja Joy Velu for secretarial assistance. This paper is an updated and abbreviated version of IGIDR WP-2021–025.

## EDUCATIONAL ASSESSMENT, EVALUATION AND ACCOUNTABILITY

1. Skedsmo, G., & Huber, S. G. (2022, August). Learning to assess and evaluate complex realities. *Educational Assessment, Evaluation and Accountability*, 34(3), 275–277. <https://doi.org/10.1007/s11092-022-09397-9>

**Abstract:** Education institutions are assigned complex missions, responsibilities and tasks. Even if it seems easy to agree on the core qualities they should fulfil, it proves rather challenging to give precise definitions that can be operationalized and measured in valid, reliable and fairways according to sometimes contradicting ideals. Conceptual and empirical works by researchers are both important contributions for improving policies and practices. The articles presented in this issue address assessment discourses and ethics but also point to the unintended consequences of country regulations of school entry age and important factors to improve internal and external evaluations.

2. Coombs, A., & DeLuca, C. (2022, June 29). Mapping the constellation of assessment discourses: a scoping review study on assessment competence, literacy, capability, and identity. *Educational Assessment, Evaluation and Accountability*, 34(3), 279–301. <https://doi.org/10.1007/s11092-022-09389-9>

**Abstract:** Over the past three decades, policy and professional standards have repeatedly called teachers to integrate assessment continuously across their practice in various ways to identify, monitor, support, evaluate, and report on student learning. Educational researchers have conceptualized and operationalized multiple constructs to understand teachers' classroom assessment practice including 'assessment competency,' 'assessment literacy,' and later, 'assessment capability' and 'assessment identity.' The result of these multiple constructs presents a constellation of assessment discourses, which have influenced contemporary educational policies and professional development practices across systems, shaping understandings of teachers' assessment work. Yet of concern is the resulting confusion that ensues when multiple discourses related to the same professional responsibility proliferate in a short timeframe, arising from dissimilar historic foundations, and each replete with epistemological assumptions and unique connotations for practice. As such, our aim in this paper is to critically map the constellation of assessment capacity discourses through a scoping review methodology to examine how these related discourses have been conceptualized for pre-service or in-service teachers. Driving this analytic mapping was the following research question: How are assessment competence, assessment literacy, assessment capability, and assessment identity conceptualized in peer-reviewed research? Specifically, we were interested in analyzing the evolution of each construct over time (i.e. since the introduction of the construct into peer-reviewed literature) and space (i.e. geography), and in considering how the constructs contribute toward a current view of teachers' assessment work. To this end, our provides the basis for theorizing new directions and possibilities for supporting teachers' in their assessment roles and responsibilities.

3. Gao, R. (2022, January 22). *Factors associated with Chinese undergraduates' perceptions of the ethical issues in classroom assessment practices—a mixed methods study*. SpringerLink. Retrieved October 7, 2022, from [https://link.springer.com/article/10.1007/s11092-022-09380-4?error=cookies\\_not\\_supported&code=204ead5b-114a-45c4-9fb5-6a658f028fc8](https://link.springer.com/article/10.1007/s11092-022-09380-4?error=cookies_not_supported&code=204ead5b-114a-45c4-9fb5-6a658f028fc8)

**Abstract:** Although studies have been conducted on educators' perceptions of assessment practices, few studies explored students' perceptions of the ethical issues in classroom assessment. A mixed design research method was used to examine factors associated with students' perceptions of the ethicality of classroom assessment practices. A sample of 1996 undergraduate students enrolled in 177 colleges and universities in China participated in the quantitative phase of the study to complete a survey measuring students' perceptions regarding the ethicality of classroom assessment. In the qualitative phase, 579 participants responded to the open-ended questions concerning their justification of the ethicality of the individual assessment situations. Quantitative analyses indicated that students' gender, grade level, major, and program were associated with their perceptions of the ethicality of multiple assessment practices (i.e., multiple assessment, surprise items, considering effort and attendance in grading, and giving feedback). Qualitative analyses showed that conflicting needs of different stakeholders in classroom assessment (i.e., student needs vs. assessment needs, teacher needs vs. assessment needs, student needs vs. student needs) were associated with their perceptions. Findings of the current study offer insights for teachers regarding how to make classroom assessment practices ethical based on diverse needs of stakeholders involved in assessment.

4. Jerrim, J., Lopez-Agudo, L. A., & Marcenaro-Gutierrez, O. D. (2021, November 25). Grade retention and school entry age in Spain: a structural problem. *Educational Assessment, Evaluation and Accountability*, 34(3), 331–359. <https://doi.org/10.1007/s11092-021-09375-7>

**Abstract:** Grade retention has been the focus of the education debate in Spain for decades. On average, more than 30% of students have repeated at least one grade before they finish (or dropout from) their compulsory studies. The present research provides new evidence on this issue by investigating the influence of Spain's school entry age upon students' grade retention. Using data from 15-year-old students who participated in the PISA 2006, 2009, 2012 and 2015 assessments, we implement a regression discontinuity analysis. Our key finding is that students who were born late in the year (younger students) are more likely to repeat a grade. Yet, once they reach secondary education, the disadvantage they suffer due to their younger school starting age seems to disappear. Hence, the key reason why younger students have lower PISA scores than older students in Spain is due to their increased likelihood of repeating a grade, rather than being due to their relative age per se. To avoid these artificial disadvantages of younger students and unfair retention, we suggest that policymakers inform families about this school entry issue and also make the school entry law more flexible. This would facilitate parents of younger children to choose whether to delay their children's school enrolment or not.

5. Kurum, G., & Cinkir, S. (2022, May 30). The use of stakeholder voice through school self-evaluation in Turkish schools. *Educational Assessment, Evaluation and Accountability*, 34(3), 361–389. <https://doi.org/10.1007/s11092-022-09385-z>

**Abstract:** School self-evaluation based on multiple data sources has been used to evaluate the quality of education at schools. This study aims to reveal the state of the education process, health, safety, relations and communication, and participation in management at school. The study is conducted with a case study design, in a public secondary school. The researchers developed a School Self-Evaluation Model Supporting School Development and applied it to this study. In this study, two study groups were formed through purposeful sampling. Data was obtained from students, parents, teachers, and school administrators during the quantitative phase of the study, and these stakeholders were interviewed during the qualitative phase. In addition, while directing the implementation of their planned approach at the school, the authors conducted observations. The materials used to support the quantitative and qualitative data were also evaluated, and possible indicators were identified. According to the research findings, the stakeholders had good perceptions of the education processes in the school. Furthermore, the views of the stakeholders based on health, safety, relationships, and communication, participation in school management are also generally positive. However, it has been determined that there are some problems in student nutrition services, student relations, and participation in school management. All told, the stakeholders have generally satisfied with the education process at school. These findings have pointed out that school self-evaluation is very applicable for the constant improvement of schools based on various evidence.

6. Zheng, H., & Thomas, S. (2022, May 17). The challenges of school inspection practice in demonstrating and improving education quality: stakeholder perceptions in China. *Educational Assessment, Evaluation and Accountability*, 34(3), 391–422. <https://doi.org/10.1007/s11092-022-09390-2>

**Abstract:** This paper presents new evidence that explores the strengths, weaknesses and overall quality of school inspection practice in China. In one city region of Shandong Province, the research examines stakeholder perceptions of inspection purposes, processes and outcomes, as well as the potential to improve inspection practice and compulsory education quality in China. A mixed-methods empirical design was employed to conduct the research involving ten purposively selected junior high schools. Data collection methods included a survey of 364 teachers and headteachers and 13 stakeholder interviews with headteachers, teachers, as well as city and national inspectors, and an educational officer. The survey data were analysed through descriptive analysis and a repeat-measures one-way ANOVA, and the interview data were analysed thematically. The findings supply new empirical evidence regarding the context specificity of school inspection in China and identify pertinent issues regarding school inspection quality. This study overall argues that school inspection criteria and methods in Shandong province and more broadly in China could be improved by taking better account of stakeholder views and school contexts and by putting more stress on providing school-based professional improvement guidance integrated within or alongside

inspection processes, instead of just intense bureaucratic monitoring of inspection outcomes.

## **EDUCATIONAL MEASUREMENT: ISSUES AND PRACTICE**

1. Tong, Y. (2022, May 30). NCME Presidential Address 2021: Assessment Research and Practice in the Post-COVID-19 Era. *Educational Measurement: Issues and Practice*, 41(2), 7–11. <https://doi.org/10.1111/emip.12509>

**Abstract:** COVID-19 is disrupting assessment practices and accelerating changes. With special focus on K-12 and credentialing exams, this article describes the series of changes observed during the pandemic, the solutions assessment providers have implemented, and the long-term impact on future practices. Additionally, this article highlights the importance of the balanced assessment system, the use of assessments both for learning and of learning, and using assessments to support for social justice, equity and inclusion. These desired uses and outcomes will continue to challenge assessment and measurement experts on how they design, develop, and implement assessments moving forward.

**Keywords:** Balanced Assessment System, Covid -19's impact on assessment, credentialing exams, DEI practice in assessment, equity in assessment, K-12 assessment, licensure/ certification, NCME, remote proctoring, social justice

2. Schneider, M. C., Agrimson, J., & Veazey, M. (2021, December). The Relationship between Item Developer Alignment of Items to Range Achievement-Level Descriptors and Item Difficulty: Implications for Validating Intended Score Interpretations. *Educational Measurement: Issues and Practice*, 41(2), 12–24. <https://doi.org/10.1111/emip.12480>

**Abstract:** This paper presents results of a score interpretation study for a computer adaptive mathematics assessment. The study purpose was to test the efficacy of item developers' alignment of items to Range Achievement-Level Descriptors (RALDs; Egan et al.) against the empirical achievement-level alignment of items to investigate the use of RALDs as the epicenter of the test score interpretation validity argument. Item developers aligned 82%–87% of items in a computer adaptive item bank for Grades 3–8 mathematics to the assessment's RALDs that had been reconciled to the test scale after standard setting. The degree of consistency between the hypothesized alignment and actual alignment was examined using agreement statistics. Item developers correctly identified the empirical achievement level of 56%–60% of the items, which was above the chance level of agreement. An emerging technique known as embedded standard setting (ESS; Lewis and Cook) was then used to evaluate whether score interpretations based on item developer classifications of items to RALDs were comparable to the score interpretations derived from the cut scores set in 2018. Score interpretations for the first two achievement levels were consistent across administrations; however, for the most advanced students score interpretations were not maintained.

**Keywords:** Achievement-level descriptors, alignment, validir

- Russell, M. (2021, July 29). Clarifying the Terminology of Validity and the Investigative Stages of Validation. *Educational Measurement: Issues and Practice*, 41(2), 25–35. <https://doi.org/10.1111/emip.12453>

**Abstract:** Despite agreement about the central importance of validity for educational and psychological testing, consensus regarding the definition of validity remains elusive. Differences in the definition of validity are examined and reveals that a potential cause of disagreement stems from differences in word use and meanings given to key terms commonly employed when discussing validity. A proposal for the meaning and use of specific terms is offered and a framework that divides issues associated with validity is presented. Specifically, the framework divides what Messick termed “an integrated evaluative judgment” into three components: Instrument Validity, Verification of Interpretation and Decision, and Utility of Actions.

**Keywords:** Assessment, Testing, Validity

- Xiao, Y., Veldkamp, B., & Liu, H. (2021, December). Combining Process Information and Item Response Modeling to Estimate Problem-Solving Ability. *Educational Measurement: Issues and Practice*, 41(2), 36–54. <https://doi.org/10.1111/emip.12474>

**Abstract:** The action sequences of respondents in problem-solving tasks reflect rich and detailed information about their performance, including differences in problem-solving ability, even if item scores are equal. It is therefore not sufficient to infer individual problem-solving skills based solely on item scores. This study is a preliminary attempt to incorporate process data analysis into the measurement of problem-solving ability. The entire procedure consists of using information from process data as prior information for the estimation of problem-solving proficiency in an item response model. The purpose of this study is twofold: (1) to investigate the impact of adding process information on the estimation of latent ability; (2) to examine the extent to which the ability estimates obtained from the combination model can reflect the information of the problem-solving process. Seven problem-solving items from the Programme for International Assessment of Adult Competencies were used. Results indicate that the inclusion of process priors enhances the correlation between proficiency estimates and process information related to the problem-solving strategies adopted by respondents, as well as to their solution efficiency. The inclusion of process priors further reveals differences in the problem-solving performance of respondents exhibiting the same score pattern and increases precision of latent ability estimation.

**Keywords:** Ability estimation, Bayesian framework, item response theory, problem-solving, process data analysis.

5. Bennett, R. E., Zhang, M., Sinharay, S., Guo, H., & Deane, P. (2021, November 11). Are There Distinctive Profiles in Examinee Essay-Writing Processes? *Educational Measurement: Issues and Practice*, 41(2), 55–69. <https://doi.org/10.1111/emip.12469>

**Abstract:** Grouping individuals according to a set of measured characteristics, or profiling, is frequently used in describing, understanding, and acting on a phenomenon. The advent of computer-based assessment offers new possibilities for profiling writing because aspects can be captured that were not heretofore observable. We explored whether writing processes could be profiled of over 30,000 adults taking a high-school equivalency examination. Process features were extracted from keystroke logs, aggregated into composite indicators, and used with essay score to assign individuals to profiles. Analyses included computing the percentages of individuals that could be classified, using MANOVA to examine differences among profiles on external variables, and examining if profiles could be distinguished from one another based on patterns derived from cluster analysis. Results showed that about 30% of examinees could be classified into profiles that were largely distinct. These results contribute toward a foundation for using such profiles in describing how individuals compose and in how their writing might be improved.

6. Almusharraf, N. (2021, November 24). Coconstructing a Meaningful Online Environment: Faculty–Student Rapport in the English as a Foreign Language College Classroom. *Educational Measurement: Issues and Practice*, 41(2), 70–81. <https://doi.org/10.1111/emip.12471>

**Abstract:** Rapport-building is perceived to enhance engagement, level of gratification, and collaboration, resulting in better student engagement in the learning process. The current study measures the extent to which postsecondary instructors promote a meaningful online environment through faculty–student rapport (FSR) in undergraduate English as a foreign language (EFL) classrooms. This study is grounded on social constructivism and self-determination theoretical frameworks, suggesting that building meaningful environments aids students’ investment and engagement in learning. The study utilizes a questionnaire and classroom observations to explore the relationship between FSR and students’ level of engagement. The results revealed a significant difference between the rapport-building and nonrapport-building groups at a personal and academic level. The findings shed light on student attitudes about various instructional practices and techniques that play a critical role in building a safe, proactive, dynamic, and engaging online environment. Further research is required to reduce the issues related to physical distancing, emotional expressions, and technological competence. Technical competency is the primary prerequisite of any specialized activity; consequently, instructors need to assess learners’ knowledge and accessibility within the learning community. Reflective practice is recommended for faculty members who are thus encouraged to continuously reflect on their teaching practice, redirect and modify their performance to meet their learners’ specific needs, and design and maintain a healthy and encouraging relationship with individual students.

**Keywords:** EFL classrooms, Faculty-student rapport, rapport-building, student connections, student engagement.

7. Lee, C. (2021, November 24). Using Classification Tree Models to Determine Course Placement. *Educational Measurement: Issues and Practice*, 41(2), 82–89. <https://doi.org/10.1111/emip.12470>

**Abstract:** Appropriate placement into courses at postsecondary institutions is critical for the success of students in terms of retention and graduation rates. To reduce the number of students who are misplaced, using multiple measures in placing students is encouraged. However, in practice most postsecondary schools utilize only a few measures to determine course placement. One of the reasons is the lack of research on methodologies that can be used to develop and establish appropriate cutoff scores using multiple measures. The purpose of this study is to investigate whether the classification tree model is a useful alternative approach to the multiple logistic regression model for placement into college courses. For comparison, this research examined the approaches' effectiveness and predictive accuracy for College Algebra. Data were obtained from two medium-sized four year, midwestern institutions. Using two well-known tree models, important measures and their cutoff scores for College Algebra were determined. The findings of this study showed that tree models were an effective alternative approach. Tree models also performed better than, or as well as, the multiple logistic regression model in predictive accuracy.

**Keywords:** College Algebra, Course placement, decision tree models, logistics regression model

8. Moon, J. A., Lindner, M. A., Arslan, B., & Keehner, M. (2022, January 21). Investigating the Split-Attention Effect in Computer-Based Assessment: Spatial Integration and Interactive Signaling Approaches. *Educational Measurement: Issues and Practice*, 41(2), 90–117. <https://doi.org/10.1111/emip.12485>

**Abstract:** Many test items use both an image and text, but present them in a spatially separate manner. This format could potentially cause a split-attention effect in which the test taker's cognitive load is increased by having to split attention between the image and text, while mentally integrating the two sources of information. We investigated the split-attention effect in computer-based assessment by implementing: (a) *spatial integration* which embeds text information into a diagram as labels, and (b) *interactive signaling* which highlights a segment of a diagram when test takers hover their mouse over an answer option that refers to the relevant segment. Adult participants solved computer-based geometry items in which spatial integration was used as a within-subject variable and interactive signaling was used as a between-subject variable. The main findings showed that, compared with the nonintegrated and nonsignaled items, (a) spatial integration significantly increased item-solving efficiency indicated by reduced time on task, especially for test takers who had higher prior knowledge, and (b) interactive signaling increased item-solving efficiency only in the spatially integrated items. The current findings suggest that applying multimedia design principles for reducing split-

attention to test item design could potentially reduce test takers' construct-irrelevant cognitive load in computer-based assessment.

**Keywords:** Cognitive load, computer-based testing, signaling, spatial integration, split-attention

9. Sinharay, S. (2022, January 17). Reporting Pass–Fail Decisions to Examinees with Incomplete Data: A Commentary on Feinberg (2021). *Educational Measurement: Issues and Practice*, 41(2), 118–123. <https://doi.org/10.1111/emip.12487>

**Abstract:** Administrative problems such as computer malfunction and power outage occasionally lead to missing item scores, and hence to incomplete data, on credentialing tests such as the United States Medical Licensing examination. Feinberg compared four approaches for reporting pass–fail decisions to the examinees with incomplete data on credentialing tests. The goal of this brief paper is to demonstrate that the classical method of logistic regression may be preferable to the approaches suggested by Feinberg in some cases including the case when the credentialing test is high-stakes.

**Keywords:** IRT models, logistic regression, regression imputation

## EDUCATIONAL PSYCHOLOGY IN PRACTICE

1. Ruttledge, R. (2022, May 9). A whole school approach to building relationships, promoting positive behaviour and reducing teacher stress in a secondary school. *Educational Psychology in Practice*, 38(3), 237–258. <https://doi.org/10.1080/02667363.2022.2070456>

**Abstract:** This exploratory study considered the impact of a whole school programme to enhance relationships, promote positive behaviour, and reduce teacher stress in a secondary school. The programme was facilitated by the school’s educational psychologist (EP) drawing on psychological theory and practice across a range of paradigms (ecosystemic, cognitive, attribution, attachment, developmental, and relational). Some key aims of the programme were to change teacher attributions around challenging behaviour and to promote a whole school ethos to further embed relational approaches. The qualitative data suggest that the programme was supportive for teachers, increased their self-efficacy and reduced feelings of stress. Further longitudinal research is needed to compare programmes like the one described here with matched controls, ideally including observational measures of teachers and students. Challenges in progressing organizational change in secondary schools are discussed. EPs are well positioned to support school communities through systems consultation and the application of psychological problem-solving frameworks.

**Keywords:** teacher self-efficacy, teacher wellbeing, relational approaches, positive behaviour, secondary school, whole school, educational psychologist

2. Sobitan, T. (2022, June 8). Understanding the experiences of school belonging amongst secondary school students with refugee backgrounds (UK). *Educational Psychology in Practice*, 38(3), 259–278. <https://doi.org/10.1080/02667363.2022.2084042>

**Abstract:** Research into refugee students’ settlement in host countries highlights school belonging as essential to their wellbeing and academic achievement. This research aimed to understand how secondary school refugee students experience school belonging in the North East of England. Interpretative Phenomenological Analysis was used to understand the views of refugee students. Four superordinate themes were developed: agency, participation, safety and separation. Findings suggested that EPs could support the school belonging of refugee students through their capacity to work across school systems. In this, EPs could draw on the bio-psycho-socio-ecological model of school belonging, hence providing an ecological and interactionist approach to supporting this group and also highlighting additional factors which emerged for refugee students. The discussion around the findings highlighted the barriers and facilitators to the participants’ school belonging. Overall, the research findings contribute to a growing body of literature on the school belonging of refugee students in the UK.

- Daniels, L. M., Goegan, L. D., Tulloch, S. L., Lou, N. M., & Noels, K. A. (2022, June 18). School-led mindset messaging: understanding elementary students' meaning and emotions. *Educational Psychology in Practice*, 38(3), 279–296. <https://doi.org/10.1080/02667363.2022.2090904>

**Abstract:** Evidence generally supports a positive association between growth mindset and academic outcomes, even if the experimental evidence for growth mindset interventions is somewhat more tenuous. From an applied perspective, the concept of growth mindsets has grown in popularity with a proliferation of materials readily available to teachers and school administrators. The purpose of this multi-method study was to explore elementary students' (ages 6-12) understanding of growth mindset messaging created by their school and teachers, and its association with students' emotions. The results showed that students were positively impacted by the growth mindset messaging, both in school and when facing challenges outside of school. Their emotions were largely positive, with the exception of frustration, which participants associated equally with a growth and a fixed mindset. Results are discussed in relation to mindset theory broadly as well as in regards to school-and teacher-initiated mindset messages.

**Keywords:** Growth indset, Elementary school, Student emotions, School-based

- Marku, B., Niolaki, G., Terzopoulos, A., & Wood, C. (2022, July 3). Eastern European parents' experiences of parenting a child with SEN in England. *Educational Psychology in Practice*, 38(3), 297–316. <https://doi.org/10.1080/02667363.2022.2100320>

**Abstract:** Parenting a child with Special Educational Needs (SEN) presents numerous challenges for families. For immigrant parents, these challenges can be particularly difficult to overcome when faced with structural, cultural and linguistic barriers. This qualitative study explored the lived experiences of eight Eastern European immigrants parenting a child with SEN in England. Semi-structured interviews were conducted, and a data-driven thematic analysis of a series of interviews was carried out. The study identified two key themes: (a) embarking on an unpredicted journey and (b) navigating through challenges. The analyses highlight discrepancies in partnership working between parents and educators and shortcomings in advice that professionals provided to these parents, potentially placing pupils and their families at a disadvantage. The implications for educational psychologists (EPs) and other professionals working with Eastern European parents raising a child with SEN are also discussed.

**Keywords:** Parents' experiences, SEN, EAL, Psychological Challenges, Professional Support

- Clarke, T., & Hoskin, S. (2022, July 3). Teaching children and adolescents about mental wellbeing: an exploratory multi-site case study in England. *Educational Psychology in Practice*, 38(3), 317–340. <https://doi.org/10.1080/02667363.2022.2100321>

**Abstract:** Attention on children and young people’s (CYP) wellbeing has increased internationally over the past two decades, particularly in the context of education. This small scale, preliminary study was conducted across four state-funded schools in England (two primary; two secondary) amidst a time of policy change that saw the introduction of Mental Wellbeing Support Teams in schools, and the mandating of statutory Health Education curricula. The study investigated whether psycho-informed lessons could be developed aligned to curriculum guidelines, and how pupils would engage with this learning content. Drawing on Positive Education (PE) theory, and Self-Determination theory (SDT) the researchers worked collaboratively to co-develop and deliver lessons to CYP (aged 9–11 years, and 14–15 years). This paper describes the theoretical underpinnings of the lessons, learning activities used, and critically reflects on pupils’ engagement. Implications for practice are considered and recommendations made regarding possible future teaching of mental wellbeing in England.

**Keywords:** Wellbeing, Positive Education (PE), Self-Determination Theory (SDT), Mental wellbeing support teams, Mental Health Curriculum, Well-Being Therapy (WBT), Whole-child education

## ESSAYS IN CRITICISM

1. Petrina, A. (2021, July 1). Translation in *Love's Labour's Lost*. *Essays in Criticism*, 71(3), 251–268. <https://doi.org/10.1093/escrit/cgab013>

**Extract:** THE ENGLISH RENAISSANCE did not invent translation, but it woke with a special keenness to the consciousness of the act of translation and its cultural implications. The period was marked by a wealth of cultural encounters, as shown both by the works and by the libraries of Elizabethan intellectuals. Warren Boutcher, describing John Florio's library, comments: A look at other, comparable library lists, polyglot dictionaries, rhetoric and language manuals of the period helps situate Florio's work in an area of late humanistic activity which has largely escaped analysis due to the placement of disciplinary and sub-disciplinary boundaries. This is the ground between university Latin and the European vernaculars, between the world of academe and the world of diplomacy and commerce, a cultural environment which was not only interdisciplinary but interlinguistic in a particular and highly consistent fashion: people utilised a continuum of languages that most usually included Latin, French, Italian and Spanish – alongside, in the case of English humanists, English itself, and with other, less common inclusions such as Greek and German.

2. Eklund, C. (2021, July 1). Shakespeare's Love-Triangle Poems. *Essays in Criticism*, 71(3), 269–282. <https://doi.org/10.1093/escrit/cgab014>

**Extract:** THE CHARM AND AUDACITY of Pierre de Ronsard's 'Quand vous serez bien vieille' ('When you are truly old') turns on the speaking of the poet's own name when, in a glimpse into the future, he has his aged beloved look back upon her youth and lament, 'Ronsard me célébrai du temps que j'étais belle' ('Ronsard celebrated me in the days when I was beautiful'). The beloved's name regularly graces the Renaissance sonnet, but there is something novel in the poet's emergence out of the pronominal – 'je' – into the nominal. It is, however, a limited brand of novelty. The elegiac regret it occasions and the carpe florem counsel ('Cueillez dès aujourd'hui les roses de la vie' – 'Pluck starting today the roses of life') are classical, while the actual voicing of the name finds justification in the age-old notion of undying literary fame. 'Ronsard' is more a bid for poetic posterity than a proper name designating the lyric speaker as the source of the sonnet. Accordingly, the poem assumes as a matter of course not only the perfect clarity of 'Ronsard's' identity, but also its coherence for years to come.

3. Fermanis, P. (2021, July 1). Word and Picture in Walter Scott. *Essays in Criticism*, 71(3), 283–305. <https://doi.org/10.1093/escrit/cgab011>

**Extract:** IN THE INTRODUCTORY NARRATIVE to *The Bride of Lammermoor* (1819), the sign-painter turned portrait-painter Dick Tinto accuses his friend Peter Pattieson, the fictional author of the novel, of overusing dialogue or, as Tinto more colloquially puts it, 'the gob box', as a means of representing character in his novels (BL, 21).<sup>1</sup> Mounting a heated defence of the classical idea *ut pictura poesis*, Tinto dismisses Pattieson's counter-argument that painting appeals to the eye whereas language

addresses the ear, maintaining that words, ‘if properly employed’, have the ability to allow us to see or reconstruct images (BL, 22). Once widely endorsed, Tinto’s ‘picture theory’ of representation was increasingly disputed by eighteenth century British aestheticians.<sup>2</sup> In *Plastics* (1712), Lord Shaftesbury rejects ut pictura poesis, considering comparisons between painting and poetry to be ‘constrained, lame, or defective’.<sup>3</sup> Edmund Burke, too, claims in his *Philosophic Enquiry* (1757) that words, on the whole, do not generate images, drawing a distinction between painting’s imitative capacity to show objects in space and poetry’s figurative ability to designate them in time.

4. Haffenden, J. (2021, July 1). ‘Mr Eliot somewhere says’: The ‘affectation of unaffectedness’ in *Seven Types of Ambiguity*. *Essays in Criticism*, 71(3), 306–351. <https://doi.org/10.1093/escrit/cgab012>

**Extract:** WILLIAM EMPSON TENDED to become assertively defensive when accused of making scholarly errors – particularly slips of transcription – in his critical writings, especially when readers accused him of misgiving a text to suit a point of interpretation. Ironically, faced with the charge that he was a sloppy copyist, he tried, now and then, to defend his readings on the grounds that the text he was ‘copying out’ was itself at fault – on the whole unavailing. The several editions of Empson’s classic works that have appeared down the years, whether in new editions or various revised impressions – *Seven Types of Ambiguity*, *Some Versions of Pastoral*, *The Structure of Complex Words*, and *Milton’s God* – have either perpetuated original mistakes or introduced fresh errors of transcription (some major, many minor), and trifling misattributions. The trouble began even with the opening words of his first, most astonishing, book, in which Empson mangled his reference to the title page of a critical study to which he had hoped to pay decent public tribute. Accordingly, an erratum slip was promptly tucked into all available copies of the volume: ‘For *from Mr Robert Graves’ analysis* read *from Miss Laura Riding’s and Mr Robert Graves’ analysis*. It is regretted that *A Survey of Modernist Poetry* is erroneously referred to as by Mr Robert Graves. It is by Miss Laura Riding and Mr Robert Graves’. The awkwardly exact phrasing of that apology actually served, in effect, to say the same thing twice, which gives an index of the publisher’s anxiety, if not Empson’s, to appease Graves and Riding (both of whom had written in to complain).

## EUROPEAN JOURNAL OF SPECIAL NEEDS EDUCATION

1. Hassani, S., Alves, S., Avramidis, E., & Schwab, S. (2021, April 9). The Circle of Friends intervention: a research synthesis. *European Journal of Special Needs Education*, 37(4), 535–553. <https://doi.org/10.1080/08856257.2021.1911522>

**Abstract:** This research synthesis investigates studies that evaluated a well-known intervention, the Circle of Friends (CoF) – which seeks to promote the inclusion of socially neglected students. The aim of the review is two-fold; first, to identify the intervention’s variant applications and, second, to record what evidence-based outcomes have been reported. A systematic literature search including seven databases was conducted and based on inclusion and exclusion criteria, a total of nine articles were identified. The primary outcomes indicated that the intervention was mainly used with younger students (primary education) and only rarely used in secondary schools. Additionally, the results show that the intervention was set up significantly less often for girls. The quality of the majority of evaluations was lacking which leads to recommendations for further research on this intervention to include the utilisation of more rigorous and more rounded research designs and proper trialling. Critical issues surrounding the implementation of the intervention are also outlined.

**Keywords:** Circle of Friends, Social Participation, Special Educational Need, Friendship, Peer Group, Social Skills Intervention, Research Synthesis.

2. Rey, A., Fullana, J., & Pallisera, M. (2021, April 2). Personal support networks of adolescents with intellectual disabilities in secondary education. *European Journal of Special Needs Education*, 37(4), 554–568. <https://doi.org/10.1080/08856257.2021.1911524>

**Abstract:** Social networks are essential for social inclusion as they create opportunities for the achievement of different types of social support. People with intellectual disabilities encounter barriers to establishing social relationships and often have reduced social support networks. A structured interview was designed with the aim of studying the characteristics of the personal support networks of adolescents with intellectual disabilities. 21 secondary schools and 2 special schools were contacted to ask for their collaboration in the recruitment of students with intellectual disabilities from 14 to 19 years old. Of these, 15 schools managed to recruit 27 students and obtain the consent of both their families and the participants. Information was collected on the composition of their personal networks and their functionality as support networks. The individual data of each participant was analysed using the Ego Net social network analysis software and the relationship set was analysed using statistical techniques. The study shows that reduced social networks are identified and that friendships, linked mainly to the school, and family members are the main sources of support. The study highlights the importance of promoting social relationships in adolescents with intellectual disabilities in order to increase opportunities to develop supportive relationships that favour social inclusion.

**Keywords:** Social support, Personal support networks, Intellectual disability, Transition to adulthood, adolescents, secondary school

3. Reyes, J. I., Meneses, J., & Melián, E. (2021, April 8). A systematic review of academic interventions for students with disabilities in Online Higher Education. *European Journal of Special Needs Education*, 37(4), 569–586. <https://doi.org/10.1080/08856257.2021.1911525>

**Abstract:** The development of new educational environments based on the use of ICT has enabled the possibility to improve access and involvement for students with disabilities at the university level. Hence, this systematic review attempts to synthesise the main findings of previous interventions aimed to promote the inclusion of these students in Online Higher Education, as well as to analyse their contribution on the students' academic success, by considering the principles of both Universal Instructional Design and Universal Design for Learning. A systematic search was conducted in four databases (WOS, Scopus, ERIC, and ProQuest) following the PRISMA-P statement. This search yielded 16 articles according to the defined criteria. Four thematic categories were identified throughout a thematic synthesis: Accessibility, support, socialisation, and academic success. The findings show that both accessibility and support are important factors for promoting the disabled students' academic success in Online Higher Education but also highlight the need to apply the Universal Design in the whole system. Furthermore, the issues of academic support, inclusive pedagogical practices, and socialisation should be deeply analysed to inquire about their contribution to the students with disabilities' academic success. Lastly, the limitations of this study and future implication for research are discussed.

**Keywords:** Online higher education, Universal design, Students with disabilities, Systematic reviews, Academic Intervention, Academic Success.

4. Kuutti, T., Sajaniemi, N., Björn, P. M., Heiskanen, N., & Reunamo, J. (2021, April 25). Participation, involvement and peer relationships in children with special educational needs in early childhood education. *European Journal of Special Needs Education*, 37(4), 587–602. <https://doi.org/10.1080/08856257.2021.1920214>

**Abstract:** The aim of this study was to obtain new information about the diversity of everyday activities and social relations among children with special education needs (N = 145) in Finnish early childhood education and care (ECEC) units. In this research children's daily activities, involvement, target of attention and social relations during play and other social activities in different groups formed according to children's special educational needs are investigated. Results revealed that children with problems in self-regulation and children with major disabilities spent less time with peers and in various social activities than children with developmental language disorder and children without special education needs. The results suggest that inclusive practices are still only under development within the Finnish ECEC units. Practical implications of the results concerning ways to support children's equal participation in daily activities in early childhood education and in building peer relationships, regardless of the amount of needed support are discussed.

**Keywords:** Support in early childhood education, participation, involvement, peer relationship, early childhood education and care, inclusion.

5. Gagnon, J. C. (2021, May 24). Inclusion in American and Finnish Schools: The Neglect of Youth with Emotional and Behavioral Disorders. *European Journal of Special Needs Education*, 37(4), 603–616. <https://doi.org/10.1080/08856257.2021.1929235>

**Abstract:** Youth with emotional and behavioural disorders (EBD) are guaranteed the same right to inclusive education as other students with and without disabilities. While Finland and the United States (U.S.) are committed to the ideals of inclusion, evidence suggests that these students are often excluded. This paper discusses Finnish and U.S. policies and practices that identify and ‘push out’ youth with EBD. Additionally, the quality of education in exclusive settings, including Finnish reform schools, U.S. alternative schools and day treatment/residential psychiatric facility schools, as well as (juvenile) correctional facilities in both countries, are discussed. Recommendations are provided for policy and practice that will promote access to inclusive education for these troubled youth.

**Keywords:** Inclusion Emotional/behavioural disorders Finland, United States

6. Degroote, E., Brault, M. C., & Van Houtte, M. (2021, June 3). Teachers as disorder-spotters: (in)decisiveness in assigning a child’s hyperactivity, impulsivity and/or inattention to ADHD as the underlying cause. *European Journal of Special Needs Education*, 37(4), 617–631. <https://doi.org/10.1080/08856257.2021.1934151>

**Abstract:** Their unique observational position in the classroom allows teachers to take on an informal role as disorder-spotter. By means of focus groups in four Flemish elementary schools, this study investigates teachers’ decisiveness in assigning a child’s hyperactivity, impulsivity and/or inattention to Attention-Deficit/Hyperactivity Disorder (ADHD) as the underlying cause. Results show that, when teachers talked about specific children who exhibited hyperactivity, impulsivity and/or inattention, they were, more often than not, decisive in their observation that ADHD was or was not the underlying cause of the child’s behaviours. However, several child-related factors caused teachers to be indecisive about whether ADHD was indeed at the base of a specific child’s hyperactivity, impulsivity and/or inattention.

**Keywords:** Disorder-spotter, Teacher, ADHD, Seen children

7. Benassi, E., Bello, A., Camia, M., & Scorza, M. (2021, June 18). Quality of life and its relationship to maternal experience and resilience during COVID-19 lockdown in children with specific learning disabilities. *European Journal of Special Needs Education*, 37(4), 632–647. <https://doi.org/10.1080/08856257.2021.1940005>

**Abstract:** Children with special needs have encountered many challenges during the COVID-19 pandemic. Nevertheless, no studies have focused on the Quality of life (QoL) of children with specific learning disabilities (SpLD). This study aimed first to examine

the physical, emotional and school dimensions of QoL in a group of primary school children with SpLD. The second goal was to investigate the extent to which the experience and resilience of their mothers were related to the children's QoL. The sample included 35 children with SpLD and 85 typically developing (TD) children, and their mothers. Three standardised questionnaires were filled in by the mothers. The findings showed that, compared to TD children, those with SpLD reported worse physical health, learning processes and school-related emotional health. Relative to the TD group, the mothers of the children with SpLD experienced more negative emotions and concern towards their children's difficulties, where these closely correlated with the children's QoL. Maternal resilience appeared crucial to the emotional health of these children. Our findings were discussed in terms of the need for more inclusive teaching practices that support the learning processes and the psychological health of children with SpLD, and for supporting interventions for their mothers.

**Keywords:** Specific learning disabilities, Primary school children, COVID-19 lockdown, Quality of Life, Maternal experience and resilience

8. Ryökkynen, S., Maunu, A., Pirttimaa, R., & Kontu, E. (2021, August 8). From the shade into the sun: exploring pride and shame in students with special needs in Finnish VET. *European Journal of Special Needs Education*, 37(4), 648–662. <https://doi.org/10.1080/08856257.2021.1940006>

**Abstract:** This paper reports on a study of the dynamics of social emotions and social bonds between students and class teachers by analysing the narratives of students receiving intensive special support in the Finnish vocational education and training (VET) system. Pride refers to a strong and safe involvement in interaction, and shame implies intimidated social bonds. The analysis is based on abductive content analysis for which Greimas' actant model worked as an analysis tool. We found some students showing high respect to their teachers who acted as senders setting the objects for students' studying. Pride is based on the students' experiences in achieving the objects, thereby pleasing their teachers and secondly on their ability to see positive development in their social belonging. The students who experienced feelings of shame did not perceive themselves as being subjects of positive development, but their special needs overshadowed their social relationships. They found it difficult to see approving and benevolent senders and receivers which could be interpreted as an explicit source of shame. The results concern not only individual teachers' pedagogical practices and ways of interaction, but also the whole VET system which addresses competence and effective individual study paths rather than social belonging and communality.

**Keywords:** Vocational educational and training, VET, Special educational needs, Social emotions, social belonging, Student voices

9. Schnepel, S., & Aunio, P. (2021, June 18). A systematic review of mathematics interventions for primary school students with intellectual disabilities. *European Journal of Special Needs Education*, 37(4), 663–678. <https://doi.org/10.1080/08856257.2021.1943268>

**Abstract:** This systematic review investigates the characteristics of effective mathematics interventions for students with intellectual disabilities (ID) age 5 to 12, focusing on early numeracy, arithmetic, and arithmetical problem solving skills. Twenty studies from 2008–2020 were reviewed: 17 had a single-subject design and three a group-comparison design. The studies included a total of 135 students with ID. Consistent with previous studies, the analysis showed that interventions with systematic and explicit instruction with feedback and the use of manipulatives are effective instructional approaches and strategies for students with ID. This study reveals that effective interventions are well-structured, high intensity learning sequences adapted to the students' achievement level. The intensity of an intervention requires careful consideration of the number of intervention sessions per week and their duration. Further studies should investigate which instructional strategy is most effective for each type of skill and the optimum intensity of interventions.

**Keywords:** Systematic review, Mathematics instruction, Intellectual disability, Numeracy, Intervention studies, Intervention intensity

10. Zanobini, M., & Viterbori, P. (2021, April 21). Students' well-being and attitudes towards inclusion. *European Journal of Special Needs Education*, 37(4), 679–689. <https://doi.org/10.1080/08856257.2021.1920213>

**Abstract:** This pilot study aimed to explore the attitudes of children attending Italian primary schools towards the inclusion of peers with special needs to identify different inclusiveness profiles based on the characteristics of different types of special needs/disorders. Moreover, the study analysed the relationships among students' attitudes, different dimensions of school well-being and academic results. Three profiles indicating different levels of inclusiveness among children were identified. The moderately inclusive group showed the worst attitude towards peers with behavioural problems and the best academic results. The most inclusive group showed the highest level of school well-being, particularly for the relationships with classmates and self-efficacy dimensions.

**Keywords:** Students' attitudes, School wellbeing, Inclusiveness profiles

11. Faura-Martínez, R., & Cifuentes-Faura, J. (2021, May 24). Building a dynamic indicator on inclusive education in higher education. *European Journal of Special Needs Education*, 37(4), 690–697. <https://doi.org/10.1080/08856257.2021.1929237>

**Abstract:** The goal of inclusive education is to address students' special educational needs so that they are able to fully participate in the education community. The universities have been increasingly attempting to cater for the diversity of students by undertaking innovative projects through the adaptation of new technologies, which is key to their development. However, the evolution of inclusive education is uneven and largely depends on each university, as the resources, methods, and practices vary across institutions. The purpose of this paper is to propose an indicator to evaluate the state of inclusive education at each university. This indicator could ascertain the extent of

curriculum adaptation and the degree of accessibility at universities, as well as the resources and projects they are developing to achieve inclusion. It will allow for a ranking of institutions according to the progress made in the field of inclusive education and, more specifically, for the comparison across universities regarding the quality of the specific measures taken to help students with special educational needs. This inclusive education indicator is a dynamic tool that may be updated immediately and provides the university community with the means to guide students with specific needs and their families in pre-university and university stages, among others.

**Keywords:** Inclusive education, disability, diversity, university, indicator

12. Çiçek Gümüş, E., & Öncel, S. (2021, June 1). Examination of variables affecting peer attitudes towards children with disabilities: a cross-sectional study. *European Journal of Special Needs Education*, 37(4), 698–705. <https://doi.org/10.1080/08856257.2021.1934149>

**Abstract:** The attitudes developed towards disabled children by their peers at an early age play an important role in shaping disabled children's lives. By taking these cases into consideration, this study was conducted with the aim of 'examining the variables affecting peer attitudes towards children with disabilities'. The study conducted as cross-sectional and descriptive type. The data were collected from schools attended by inclusive or special education students, using a child descriptive information form and the 'Chedoke-McMaster Attitudes towards Children with Handicaps (CATCH)' Scale. For the statistical analysis of the data, percentage, t-test and ANOVA test were performed using the SPSS 23 software programme. Among the children included in the scope of the study, attitude scores were found to be significantly higher in girls, older children, children in interaction with a disabled individual or friend, and children studying at a school in an area with a low socioeconomic level. Economic level did not make a significant difference to attitudes. Considering that peer attitudes towards disabled children were affected by the gender, age, interaction with the disabled, and socioeconomic variables, important results were obtained for developing positive attitudes.

**Keywords:** Attitude, Disability, Peer attitudes, Special education, Catch, School health nursing

## EUROPEAN JOURNAL OF TEACHER EDUCATION

1. Durán-Martínez, R., Beltrán-Llavador, F., & Martínez-Abad, F. (2020, September 27). Training priorities in primary education bilingual programmes in Spain. *European Journal of Teacher Education*, 45(3), 303–319. <https://doi.org/10.1080/02619768.2020.1827387>

**Abstract:** Bilingual education currently faces the challenge of improving teacher training to meet the linguistic and didactic demands of a content and language integrated approach. Our paper analyses what Spanish in-service primary school teachers consider the key training priorities for their involvement in bilingual programmes. Using content data analysis, we have detected the most frequently used terms in the teachers' answers to an open-ended question. 2,830 words were examined, and the net of relations among the training priorities emerging from their discourse was established. Our results confirm that teachers prioritise the need to be proficient in English over methodological issues, which prevail once language proficiency has been achieved. They highlight investment as being crucial both to implement school bilingual programmes and to provide training opportunities for their professional development. Our study concludes that only concerted personal and administrative efforts will bridge the gap between global educational agendas and classroom performance.

**Keywords:** Bilingual education programmes, Primary education, Training, Teacher education, CLIL

2. Kórkö, M., Kotilainen, M. R., Toljamo, S., & Turunen, T. (2020, September 27). Developing teacher in-service education through a professional development plan: modelling the process. *European Journal of Teacher Education*, 45(3), 320–337. <https://doi.org/10.1080/02619768.2020.1827393>

**Abstract:** This study investigated the process of implementing professional development plans (PDPs) as a tool for teachers' continuing professional learning in Finnish Lapland. The PDP model was developed through two cycles following a design-based research (DBR) approach. The data were collected by interviewing teachers and principals, and then analysed thematically. The results showed that factors affecting the PDP process related mainly to structural and strategical work in schools. The lack of clear guidelines and support from principals and colleagues, as well as the absence of discussions on school strategy and its meaning for teachers' professional development, negatively affected the PDP process. As a result, schools' strategic planning only vaguely guided individual PDP processes. The results suggest that, for the successful implementation of a PDP process, schools' strategic planning should be more clearly integrated with teachers' PDPs in order to enhance their personal professional development in meaningful ways.

**Keywords:** Teachers' professional development, Professional development plan, In-service teacher education, Strategic planning, School development

3. Wang, X. Q., Zhu, J. C., Huo, J. Y., Liu, M. F., & Ye, B. J. (2020, October 1). Implicit professional identity: assessment and relation with explicit professional identity and well-being of pre-service teachers. *European Journal of Teacher Education*, 45(3), 338–355. <https://doi.org/10.1080/02619768.2020.1827385>

**Abstract:** The purpose of this study was to explore the effects of implicit professional identity (IPI) and its relationship with explicit professional identity (EPI) and well-being of pre-service teachers. A total of 81 Chinese female pre-service teacher volunteers participated in the study, in which their IPI, EPI, and well-being were measured using the Single Category Implicit Association Test (SC-IAT), the professional identification scale for pre-service teachers, and the short depression-happiness scale, respectively. The results indicated that (a) pre-service teachers had positive IPI; (b) the correlation between the measures of pre-service teachers' EPI and IPI was not significant; (c) IPI significantly predicted well-being negatively, while EPI positively predicted well-being; and (d) IPI moderated the relationship between EPI and well-being. In the weak IPI group, EPI did not significantly predict well-being; however, in the strong IPI group, EPI significantly predicted well-being positively.

**Keywords:** Pre-service teacher, Implicit professional identity, explicitly professional identity, Well-being, Female

4. Barrable, A., Touloumakos, A., & Lapere, L. (2020, October 4). Exploring student teachers' motivations and sources of confidence: the case of outdoor learning. *European Journal of Teacher Education*, 45(3), 356–372. <https://doi.org/10.1080/02619768.2020.1827386>

**Abstract:** Outdoor learning has become an important part of policy and practice across several European contexts. While research indicates that outdoor experiences can enhance learning and mental health outcomes, studies have also identified a number of barriers to providing such experiences the most prevalent being that of teachers' confidence. Acknowledging the role of Initial Teacher Education (ITE) in preparing teachers for the demands and complexities of providing meaningful, safe and relevant outdoor learning experiences, this article explored teachers' experiences both in general, and within a one-year ITE course in Scotland, employing a qualitative methodology. In particular, semi-structured interviews were used with seven ITE students. Results yielded through thematic analysis revealed mastery experiences as being preferred, while vicarious experiences were also seen as useful. In addition, previous experiences in adulthood and childhood impact on the motivation of student teachers to teach outdoors. Implications for ITE programmes are presented.

**Keywords:** Initial teacher education, Outdoor learning, Motivation, Self-efficacy

5. Levin, O., & Flavian, H. (2020, October 8). Simulation-based learning in the context of peer learning from the perspective of preservice teachers: a case study. *European Journal of Teacher Education*, 45(3), 373–394. <https://doi.org/10.1080/02619768.2020.1827391>

**Abstract:** Recently, simulation-based learning (SBL) has become an inseparable part of teacher-education. This case study examined the learning processes that preservice teachers experienced while participating in SBL. The main goal of the study was to identify the aspects of peer learning inherent to SBL that are beneficial for the teacher-education process, to facilitate the development of effective teacher-education modules. Current research questions focus on SBL experiences and insights, as seen from the perspective of the preservice teachers regarding peer-learning patterns. Preservice teachers identified the following four benefits related to the implementation of SBL in the context of peer learning: Readiness to provide and accept feedback; The observers' reflective analysis of the experience; Expanding one's view of the situation; Collegial bonding. These findings are relevant to teachers around the world and provide evidence of the importance of SBL in the framework of teacher education and especially in the context of peer learning.

**Keywords:** Simulation-based learning, Peer-learning, Preservice-teachers, Teaching training, Teacher education

6. McGarr, O., & Emstad, A. B. (2020, October 11). Comparing discourses on reflective practice in teacher education policy in Ireland and Norway: critical reflection or performance management? *European Journal of Teacher Education*, 45(3), 395–413. <https://doi.org/10.1080/02619768.2020.1832984>

**Abstract:** Policy documents relating to teacher education in Ireland and Norway from 2008 to 2016, representing periods of change in teacher education in both jurisdictions, were analysed to explore the discursive construction of reflective practice. Employing a discourse analysis, the study found that, while reflective practice was seen as important in both countries, they differed in terms of why it should be used. Overall, reflective practice was presented as primarily a competency required by teachers to evaluate and improve their practice, however the rationale for this improvement appeared to differ in the two contexts. In Ireland reflective practice was presented primarily as a tool for self-improvement. A similar focus was evident in the Norwegian documents however they also emphasised the teachers' contribution to the school community. The paper discusses the encroachment of performativity discourses on conceptualisations of reflective practice and discusses implications of this narrowing policy discourse on teacher education.

**Keywords:** Reflective Practice, Critical reflection, Teacher education

7. Sancho-Gil, J. M., & Domingo-Coscollola, M. (2020, October 12). Expanding perspectives on secondary education teachers' learning ecosystems: implications for teachers' professional development. *European Journal of Teacher Education*, 45(3), 414–434. <https://doi.org/10.1080/02619768.2020.1832985>

**Abstract:** This article builds on APREN-DO research project, which explores how secondary school teachers learn, using an inclusive research approach and visual and narrative methods. To this end, twenty-eight secondary school teachers created and

narrated their learning cartographies, showing what, how, where, with whom, and with what they learn. This paper challenges traditional conceptions of learning (mainly cognitive or individual) and introduces the notion of learning ecosystems where intra-action is at the core of learning. It considers the (dis)continuous, non-linear, fragmented and fractal dimensions of learning made up of intra-actions between living beings, culture, and matter. It provides results on the learning characteristics of teachers, and the peculiarities of their significant ecosystems (professional, familial, and educational). It evidences that teachers' learning takes place everywhere, in every space, at every moment of their lives, with different people and the surrounding resources. We also highlight suggestions for improving teachers' professional development.

**Keywords:** Cartographies, Teacher learning, Learning ecosystems, Intra-actions, Visual methods

8. Hyry-Beihammer, E. K., Lassila, E. T., Estola, E., & Uitto, M. (2020, December 8). Moral imagination in student teachers' written stories on an ethical dilemma. *European Journal of Teacher Education*, 45(3), 435–449. <https://doi.org/10.1080/02619768.2020.1860013>

**Abstract:** This article explores how student teachers use moral imagination when writing about an ethical dilemma. Moral imagination refers to the ability to consider a situation from a distance and to understand different perspectives through imagination. An ethical dilemma was presented in the form of a framing story, which the participating Austrian and Finnish student teachers continued writing as they chose. Through positioning and narrative analyses, we uncovered how the students' moral imagination on the ethical dilemma centred on one or more of the following foci: (1) the pupil, (2) themselves as teachers or (3) other actors. This moral imagination manifested through different storylines. The implications of these results and the relevance of the method for teacher education are discussed.

**Keywords:** Ethical dilemma, Moral imagination, Narrative research, Student teachers, Teachers education

## GEOGRAPHICAL JOURNAL

1. Maye, D., Coles, B., & Evans, D. (2022, June 16). Food geographies 'in', 'of' and 'for' the Anthropocene: Introducing the issue and main themes. *The Geographical Journal*, 188(3), 310–317. <https://doi.org/10.1111/geoj.12456>

**Abstract:** The Anthropocene provides a useful way to think through all manner of human–environment processes and challenges. This is especially pronounced in relation to food and farming, which are heavily implicated in changes to the Earth's biophysical and chemical processes. Yet, despite burgeoning interest in the Anthropocene as a concept, it is comparatively absent from recent developments in food geography. This is surprising given the profound impacts of food and agriculture on biogeochemical flows and geographical strata, and given future predictions regarding 'Anthropogenic climate change.' The objective of this Theme Issue therefore, and the five papers that comprise it, is to redress this by directly connecting and drawing together social science scholarship that examines food geographies 'in,' 'of' and 'for' the Anthropocene. The Theme Issue papers engage with different aspects of the Anthropocene as spatial phenomena and here we integrate relevant arguments from each, alongside wider agri-food geographical scholarship, to explain what we mean by food geographies 'in,' 'of' and 'for' the Anthropocene. In doing so, we respond to Tsing and colleagues' (2019, *Current Anthropology* 60, S186–97) call for a spatial as well as temporal treatment of the Anthropocene. These spatial expressions are also key to the proliferation of terms that have accompanied developments in Anthropocene scholarship. We conclude by offering up some brief reflections on a future research agenda. An important first step is to conceptualise food geographies 'in,' 'of' and 'for' the Anthropocene, including accounts that ground and potentially unsettle food and the Anthropocene as Capitalocene (Moore, 2016, *Anthropocene or Capitalocene? Nature, history, and the crisis of capitalism*) and food and the Anthropocene as more-than-human (Haraway, 2016, *Staying with the trouble: Making kin in the Chthulucen*). A second step is to address key contemporary Anthropogenic agri-food relations, especially those that are already in flux or transition. A final priority for future research is to deepen and extend the ethics of care and moral food geographies of the Anthropocene imperative.

**Keywords:** anthropocene, food geographies, future research agenda

2. Beacham, J. (2021, August 17). Planetary food regimes: Understanding the entanglement between human and planetary health in the Anthropocene. *The Geographical Journal*, 188(3), 318–327. <https://doi.org/10.1111/geoj.12407>

**Abstract:** Food regime theory provides a framework of continued and recurring interest to geographical perspectives in charting the contours connecting agri-food and capitalist political economy. Drawing principally on Marxian regulation theory, the analytical framework of food regime theory outlines three periodised regimes from the starting point of 1870 to the present day. Yet there remains ongoing and unresolved debate as to how we characterise the contemporary third regime – and whether it is a regime on its own specific terms or merely an enduring hangover from the second. I argue that an

underacknowledged dimension of attempts to characterise the third regime lies in the conjoined relationship between human and planetary health, which the diagnosis of the Anthropocene encourages us to recognise amid tumultuous global environmental change. Given food regime theory's evasive relationship with ecological dynamics within its explanatory framework, I suggest that a “planetary” retheorisation of its central contributions is increasingly prescient. In considering the growing tensions and contradictions afflicting the contemporary regime, and using soy as a working example, I work through three central arguments. First, that a planetary retheorisation serves to reveal the way in which planetary dynamics shape social life, enabling – albeit never wholly determining – food regimes. Second, that what and how people eat in their dietary practices are of planetary significance, which has been to some degree marginalised within the production-centric analyses of food regime theory. Third, that the conceptual Anthropocene highlights how planetary and human health are intricately and inextricably connected, which food regime theory must better account for. I conclude by proposing that the explanatory potential of the contemporary third regime is being stretched, with contested trajectories and nascent contours raising questions around how we might understand quite what we are living through today.

**Keywords:** Anthropocene, dietary change, food regimes, planetary turn

3. Coles, B. (2022, June 17). The broiler chicken and the Anthropocene: Using critical nexus thinking to unpack the geographies of *Gallus gallus domesticus*. *The Geographical Journal*, 188(3), 328–341. <https://doi.org/10.1111/geoj.12455>

**Abstract:** A key scientific publication demonstrates that the bio-physical composition of the broiler chicken (*Gallus gallus domesticus*) represents a signal of the Anthropocene. This finding contributes to a wider body of evidence that locates the beginning of the Anthropocene in the mid-20th century, and is part of a broader intellectual project that seeks to establish and demarcate the Anthropocene as a new geological era. This paper takes a different tack. Treating *Gallus gallus* as an objective corollary for the Anthropocene, it positions the broiler chicken and the Anthropocene as an ontologically emergent nexus comprised of social–spatial relations, materialities, and practices. The paper then adopts critical nexus thinking to trace out the key relations and materialities, and their points of convergence, and underpinning extractivist ontologies that assemble into the chicken's body. Relations of particular concern include the processes that embody surplus value into the corporality of the chicken; the rationalisation and transformation of territories and landscapes into productive units of space, and the tightly coupled, interconnected flows of relations, materials, and coordinating technologies that comprise the ‘supply chain’. It argues that by using critical nexus thinking to identify and articulate these relations that assemble into *Gallus gallus*, it renders the Anthropocene legible. Such legibility in turn fosters geographical awareness and responsibility that might lead to the changes necessary to address the large-scale spatial inequalities from which the era stems and redress the consequences that the era might otherwise engender.

**Keywords:** anthropocene, Brazil, broiler chickens, critical nexus thinking, ethnography, food

4. Newman, L., Newell, R., Mendly-Zambo, Z., & Powell, L. (2021, June 21). Bioengineering, telecoupling, and alternative dairy: Agricultural land use futures in the Anthropocene. *The Geographical Journal*, 188(3), 342–357. <https://doi.org/10.1111/geoj.12392>

**Abstract:** The global environmental impact of rising consumption of animal products presents significant challenges to sustainable land use. One alternative to the production of animal products is a set of technologies for culturing meat and dairy alternatives referred to as “cellular agriculture”; in the case of dairy, “cellular dairy”. Optimism around the benefits of these technologies is widespread, and they fit within a larger narrative of land sparing, in which high-yield farming allows the protection of habitats and the return of fallow land to ecological uses. However, questions remain as to whether cellular dairy is truly land sparing because although lab dairy could offer significant ecological benefits, these could be countered by increases in agricultural activity in other regions for the production of feedstocks. In addition, considerations around broader impacts to individuals, communities, and the environment are needed to understand whether/how cellular dairy aligns or conflicts with local, regional, and global sustainability goals. This paper employs the concept of telecoupling, which refers to socioeconomic and environmental interactions over distances, to examine the potential cellular dairy may have for contributing to sustainable food production and consumption. The research uses British Columbia, Canada as a case study, and it explores three policy scenarios: (1) incentives for the growth of a cellular dairy industry, (2) cellular dairy incentivization with eco-certification, and (3) cellular dairy incentivization with local sourcing of feedstock. The work is exploratory rather than predictive, meaning rather than forecasting outcomes, it stimulates ideas on potential direct and indirect impacts, feedback processes, and social and institutional changes associated with each scenario. The research demonstrates that exploring scenarios through a telecoupling lens can be useful for policy-makers and analysts because it facilitates comprehensive and multi-scalar thinking on the ecological, social, economic, and political factors associated with different policy options.

**Keywords:** agricultural policy, agricultural technology, cellular agriculture, human-environment systems, sustainable food production, telecoupling

5. Morris, C., Kaljonen, M., & Hadley Kershaw, E. (2021, June 22). Governing plant-centred eating at the urban scale in the UK: The Sustainable Food Cities network and the reframing of dietary biopower. *The Geographical Journal*, 188(3), 358–369. <https://doi.org/10.1111/geoj.12388>

**Abstract:** Recent years have seen an increase in actions to address a key feature of food in the Anthropocene: the over-production and consumption of animal-based foods or “animalisation” of diets. However, it is unclear whether such efforts can be understood as a coherent institutional level response that will challenge hegemonic dietary biopower, a regime of governance that normalises and reproduces animal-based food consumption. Building on scholarship that explores food governance initiatives in urban contexts and

dietary biopower across a range of empirical cases, this paper explores whether, how, and with what consequences governance actors within urban food partnerships (UFPs) of the UK Sustainable Food Cities (SFC) network are working to reframe dietary biopower so that humans are disciplined to eat less animal-based food and instead to adopt a more plant-centred diet. Document analysis and semi-structured interviews with SFC representatives suggest the breadth and depth of current UFP actions do not add up to a sustained challenge to hegemonic, animal-based dietary biopower. Rather, they reveal a plant-centred dietary biopolitical project in the making, while specific cases suggest that this project is more accurately conceptualised as arrested due to the pursuit of food system actions that are counter to and in tension with the promotion of plant-centred eating. We suggest that a more coherent reframing of dietary biopower would entail urban food governance actors engaging consistently and robustly with the debates surrounding animal-based foods, as well as identifying and enacting synergies between plant-centred eating, food poverty, and local economic development agendas.

**Keywords:** dietary biopolitics, plant-centred eating, Sustainable Food Cities, UK, urban food governance

6. Nagavarapu, S., & Kumar, R. (2022, February 20). Constituting the norm: Interrogating the anthropocene through food geographies in the more-than-human worlds of western Avadh, India. *The Geographical Journal*, 188(3), 370–382. <https://doi.org/10.1111/geoj.12432>

**Abstract:** By tracing specific moments in the history of the more-than-human landscape constituting the food geography of western Avadh, a long settled agricultural heartland in the Indo-Gangetic plains, this paper challenges the neat formulations of the Anthropocene laying out decisive global impacts of humans on the environment. Building upon the concept of the ‘patchy Anthropocene’, we show how outcomes are shaped by an imbrication of humans and non-humans—where powerful human actors seek to coerce people and corral the environment into their projects of remaking the landscape, but also where recalcitrant ecologies and resistant people thwart these intentions, especially during the colonial encounter. Contestations across power hierarchies and unintended outcomes litter the wake of the Anthropocene — as we show, efforts to save the non-human cow in the last decade have intensified processes associated with the Great Acceleration. Instead of treating the trajectory of food geographies like western Avadh as outliers and marginal to the normative process of defining change, we argue for treating it as constitutive of the norm. Only through such a process of decolonisation, by ‘provincialising the Anthropocene’, can we hope to push for epistemic justice, ecological sustainability and a more equitable world.

**Keywords:** anthropocene, colonialism, dietary diversity, food and caste, food geographies, green revolution, India, upper Gangetic plain

7. Marais, L., Ndaguba, E., Mmbadi, E., Cloete, J., & Lenka, M. (2022, February 20). Mine closure, social disruption, and crime in South Africa. *The Geographical Journal*, 188(3), 383–400. <https://doi.org/10.1111/geoj.12430>

**Abstract:** The international literature links mining booms with social disruption. The rapid economic and population growth that mining brings increases urban crime and social problems. But insufficient attention has been paid to the reverse situation: the social disruption that can accompany the closure of a mine. We compare crime statistics for four categories of small city, known in South Africa as “intermediate city municipalities,” from 2009 to 2018. Contrary to the findings of international studies, we find that those where mining was in decline had some of the highest crime rates, particularly in the category of sexual offences, whereas those where mining was growing had the lowest. Our research shows that mine decline and closure can contribute to social disruption. We argue that South African government policy has exacerbated this problem in the context of mine decline and that several dependencies created by mining further contribute to the problem. We challenge the assumption that fast population growth and an increase in the male population are prerequisites for social disruption. Our paper suggests the need for modifications to social disruption theory.

**Keywords:** Crime, intermediate city municipality, Mine closure, Mining boom, Social disruption

8. Chambers, S. N., Boyce, G., & Martínez, D. E. (2022, April 14). Climate impact or policy choice? The spatiotemporality of thermoregulation and border crosser mortality in southern Arizona. *The Geographical Journal*, 188(3), 401–414. <https://doi.org/10.1111/geoj.12443>

**Abstract:** US public officials frequently argue that high temperatures are responsible for increasing mortality of undocumented border crossers (UBCs) in southern Arizona. In this article, we suggest that these kinds of assertions are not only empirically misleading, they also serve to naturalise UBC deaths in the region by helping to obscure their structural causes. Indeed, although heat exposure is a primary cause of death in the region, prior studies have also shown that migration patterns have shifted toward more remote and rugged terrain, characterised by higher elevations and greater shade cover. Using physiological modelling and a spatiotemporal forensic analysis, we assess whether the distribution of recovered human remains has shifted toward locations characterised by environments where the human body is more or less capable of regulating core temperature, and thus succumbing to heat stress. We find that the distribution of recovered UBC remains has consistently trended toward locations where the potential for heat stress is lower, rather than higher. This demonstrates that UBC mortality is not principally a function of ambient or regional temperature, but rather is a result of specific policy decisions that lead to cumulative stress and prolonged exposure due to factors like difficulty and distance of travel. To contextualise these findings, we discuss the evolution of the US Border Patrol's policy of Prevention Through Deterrence, and apply the concepts of structural and cultural violence to theorize its consistently deadly outcomes.

**Keywords:** boundary enforcement, deterrence, mortality, remote sensing, structural violence, US-Mexico border

9. Schön, F., Domínguez, A., & Achkar, M. (2022, May 30). Urban wetlands, their dynamics and management strategies from the perspective of Environmental Geography. *The Geographical Journal*, 188(3), 415–428. <https://doi.org/10.1111/geoj.12445>

**Abstract:** The environment is a central axis of academic discussion, but even so, there are theoretical difficulties in understanding environmental problems. Environmental Geography provides arguments to articulate the relationships between society and nature and the possibility of focusing on the environmental system as an object of study. The aim of this article is to provide theoretical, methodological and operational elements for the evaluation of the interrelationship between wetland ecosystems and urban localities in Uruguay based on three case studies and analysing them from the theoretical and conceptual context of Environmental Geography. The methodological strategy is based on a multi-scale analysis: at the national scale, studying the situation of the interrelationship between wetlands and urban areas, and at the basin scale, case studies are selected to address the specific conditions of the relationship. In Uruguay, 50% of urban localities are located in wetland territories, but no national strategy can be identified to solve the problem of flooding events in urban areas. Environmental Geography offers the possibility of making the interrelationships between urban spaces and the environments where they develop visible as it makes it possible to analyse the causes of the problem at the basin level in order to achieve sustainable management.

**Keywords:** basin, environmental geography, flood, multi-scale, Uruguay, wetland

10. Slesinger, I. (2022, May 19). A strange sky: Security atmospheres and the technological management of geopolitical conflict in the case of Israel's Iron Dome. *The Geographical Journal*, 188(3), 429–443. <https://doi.org/10.1111/geoj.12444>

**Abstract:** This paper uses Israel's technologically advanced Iron Dome short-range missile defence system as a deep empirical case study to examine how affective atmospheres mediate the relationship between state power and the agency of technological objects deployed to govern (in)security. Drawing theoretically from productive tensions between more-than-human theories of object-oriented ontology, actor-network theory and affect theory, it evaluates Iron Dome as a scintillating 'bright object' with variable capacities and limitations that exceed the sum of its components. Iron Dome both overreaches and contradicts the intentions and governance logics of state elites within a spatio-temporally distributed array of architectures, infrastructures and practices. Within this milieu, its affective power is ambivalent and capricious, and can both enhance and undermine the atmospheric production of security in ways that exceed both instrumental functionality and human intentions. These findings indicate how a geography of security that attends to the affective dimension of object politics can account for the complex and non-causal ways in which technologies can either reinforce or inhibit security as an anthropocentric endeavour.

**Keywords:** affect, iron dome, Israel, security, technological agency, technology

11. Kraft, S., Marada, M., Petříček, J., Blažek, V., & Mrkvička, T. (2022, May 20). Identification of motorcycle accidents hotspots in the Czech Republic and their conditional factors: The use of KDE + and two-step cluster analysis. *The Geographical Journal*, 188(3), 444–458. <https://doi.org/10.1111/geoj.12446>

**Abstract:** In recent decades, there has been a significant increase in the number of newly registered motorcycles worldwide. However, there is not only an increase in the number of motorcycles in traffic but also an increase in the number of conflicts between motorcyclists and the surrounding environment. A relatively significant research gap can be identified in the relationship between spatial factors and motorcycle accident rates. This paper analyses the spatiotemporal patterns of motorcycle accidents and studies their underlying factors. The KDE+ method (an extension of the kernel density estimation method) is used to identify concentrations of motorcycle accident key hotspots. To study the underlying traffic accident determinants, a two-step cluster analysis is used. The analysis is based on the database of motorcycle accidents in the Czech Republic from 1 January 2016 to 31 December 2020. The paper achieves a few main findings. By applying the KDE+ method, the most dangerous sections of the road network in the Czech Republic were identified, where a significant accumulation of motorcycle accidents occur. Motorcycle accidents are highly seasonal. Motorcycle accidents tend to accumulate in the afternoon, especially during the summer months. Concerning the frequency of accidents and the collective risk index, urban traffic, that is the traffic density, is an important cause of motorcycle accidents, along with the winter period with rather unfavourable weather conditions, and especially the directional conditions—curves and intersections—are among the hazardous sections.

12. Plyushteva, A. (2022, May 24). Essential workers' pandemic mobilities and the changing meanings of the commute. *The Geographical Journal*, 188(3), 459–463. <https://doi.org/10.1111/geoj.12447>

**Abstract:** This commentary reflects on the pandemic commute and its significance for, on one hand, engaging with the problematic category of essential work, and on the other, future geographical research on transport and mobilities. Drawing on essential workers' contributions to the 'Not working from home' public engagement project, I outline some experiences of commuting during the COVID-19 pandemic. I illustrate the role of pandemic commuting in defining, and wrestling with, what the category of essential work might mean. I then discuss the ways in which attending to pandemic commutes may extend and reshape existing research on unequal mobilities. Some of the future research directions made more urgent by a focus on pandemic commutes include critical engagements with: first, intersectional inequalities in the journey to work; second, the category of 'essential journeys' as used in transport policy and practice; third, the positionality of academic researchers who work on the topic of commuting; and finally, the treatment of commuting time as an integral part of working time.

**Keywords:** commuting, COVID-19, essential workers, mobility, pandemic, transport geography

13. Brickell, K., & Lawreniuk, S. (2022, June 19). Reduced ‘fates of the body’ and ‘production of value for others’ in the global garment industry: Thinking with Berlant on eating and hunger during the COVID-19 pandemic. *The Geographical Journal*, 188(3), 464–467. <https://doi.org/10.1111/geoj.12454>

**Abstract:** During the COVID-19 pandemic, suspended and laid off garment workers struggled on severely reduced incomes to meet the cost of food for themselves and their families. It is in this context of ‘double crisis’ that our commentary focuses on the diminished eating and reduced bodily fates of garment workers during the COVID-19 pandemic. We argue that thinking with Berlant encourages and supports scholars to contemplate and articulate how the ‘production of value for others’ can reduce the ‘fates of the body’ of those living and labouring at the sharp end of the capitalist system.

**Keywords:** Cambodia, garment, hunger, labour, pandemic

14. Guasco, A. (2022, July 8). On an ethic of not going there. *The Geographical Journal*, 188(3), 468–475. <https://doi.org/10.1111/geoj.12462>

**Abstract:** Fieldwork – “going there” – is the presumed norm and baseline of geographical research. In this commentary, I propose a framework for challenging the normative framing of fieldwork in geography and other fields (including those beyond academia): an ethic of *not* going there. I argue that fieldwork, rather than a neutral rite of passage, is deeply entwined with some of the most entrenched issues in contemporary geography and research more broadly. Building on a range of prior critiques and using the lens of “access”, I propose some ways for critiquing the presumptions inherent in geographical imaginaries of “fieldwork”. This ethical framework argues that doing geographical fieldwork should have to be justified to the same extent as *not* doing fieldwork is expected to be justified. I envision an ethic of not (always) going there as an alternative way of thinking about research (and researchers) within and beyond geography

**Keywords:** access, ethics, fieldwork

## HARVARD EDUCATIONAL REVIEW

1. ZHANG, L. (2022, March 1). How Did the Post-9/11 GI Bill Affect Veteran Students' Undergraduate College Choices? An Application of Propensity Scores in Difference-in-Differences Models. *Harvard Educational Review*, 92(1), 1–31. <https://doi.org/10.17763/1943-5045-92.1.1>

**Abstract:** The Post-9/11 GI Bill represents significant public investment in and commitment to veterans who have served in the armed forces and those who will serve in the future. Recent studies have examined its effect on veterans' college participation. In this study, Liang Zhang uses data from four waves of the National Postsecondary Student Aid Study between 2004 and 2016 to examine the effect of the Post-9/11 GI Bill on veterans' college choices. This analysis finds, most notably, that veterans who received federal education benefits attended colleges in more expensive locations after the implementation of the bill. Moreover, a greater proportion of veterans attended private for-profit institutions instead of public institutions. Also, the bill had no significant impact on choices in terms of institution level as measured by four-year versus two-year colleges, Carnegie Classification, or program type (online versus in-person).

**Keywords:** veterans, post-9/11 GI Bill, education benefits, Basic Allowance for Housing, college choice, private for-profit colleges

2. REED, H. E., APTEKAR, S., & HSIN, A. (2022, March 1). Managing Illegality on Campus: Undocumented Mismatch Between Students and Staff. *Harvard Educational Review*, 92(1), 32–54. <https://doi.org/10.17763/1943-5045-92.1.32>

**Abstract:** Contributing to the literature on the institutional experiences of undocumented youth, this article by Holly E. Reed, Sofya Aptekar, and Amy Hsin explores undocumented and “DACAmended” students' experiences managing their illegality on campus and how college staff and faculty manage that illegality while organizing programs and support. Their analysis of in-depth qualitative interviews conducted with more than one hundred undocumented college students and former students and thirty-five faculty and staff members at the City University of New York identifies multiple points of tension. The “undocumented mismatch” between campus management of illegality and student experiences was evident in the exclusion and alienation of non-Latinx undocumented students, stress around legal status disclosure, and challenges around the issue of data confidentiality.

**Keywords:** undocumented immigrants, migrant programs, college students, urban universities, illegality

3. LOH, C. E., SUN, B., & LEONG, C. H. (2022, March 1). Reading Identities, Mobilities, and Reading Futures: Critical Spatial Perspectives on Adolescent Access to Literacy Resources. *Harvard Educational Review*, 92(1), 55–85. <https://doi.org/10.17763/1943-5045-92.1.55>

**Abstract:** In this article, Chin Ee Loh, Baoqi Sun, and Chan-Hoong Leong utilize a critical spatial perspective to examine how students from different socioeconomic statuses access reading resources at home, in school, and in the community. Using Geographic Information System (GIS) data, they evaluate the distribution of reading resources in Singapore by mapping out students' physical distances to libraries and bookstores. They juxtapose the data against case studies of students and survey data from more than six thousand participants from six secondary schools in Singapore to understand their use of resources for reading. Findings show that while students may have equal access to reading resources in terms of access to public resources for books, home backgrounds significantly affect students' actual access. The critical spatial approach of this study provides a new way to evaluate the efficacy and equity of resource distribution and access for twenty-first-century learning.

**Keywords:** independent reading, reading habits, adolescent, access to education, critical spatial perspectives, geographic information systems, twenty-first-century literacies

4. CORMIER, C. J. (2022, March 1). "I Wouldn't Invite Them to the Cookout": How Black Male Special Education Teachers Feel About Socializing with Their White Colleagues. *Harvard Educational Review*, 92(1), 86–106. <https://doi.org/10.17763/1943-5045-92.1.86>

**Abstract:** In this research article, Christopher J. Cormier analyzes interviews he conducted with five Black male US special education teachers to understand how they experienced social ties in the workplace. The interviews reveal the raced and gendered dynamics that complicated the interviewees' relationships with their predominantly White and female colleagues and how these Black male teachers chose to forgo social activities with their White colleagues even while knowing that this avoidance could limit their opportunities for broader career advancement.

**Keywords:** racial bias, teachers, social capital, special education, workplace learning

5. ALKOUATLI, C. (2022, March 1). Muslim Educators' Pedagogies: Tools for Self, Social, and Spiritual Transformation. *Harvard Educational Review*, 92(1), 107–133. <https://doi.org/10.17763/1943-5045-92.1.107>

**Abstract:** In this interpretive research study, Claire Alkouatli inquires into the pedagogical activities Sunni Muslim educators employ in sites of Islamic education that are often marginalized by stereotypes, misperceptions, and charges of anachronism and indoctrination. She invited thirty-five Muslim Canadian educators to share their perspectives on their pedagogies around teaching Islam to children and youth. Her thematic analysis of participants' variegated descriptions coalesced into a three-theme pedagogical typology. Distinct from mainstream secular pedagogies at the levels of ontology, epistemology, and developmental psychology, Islamic pedagogies are situated within a wider conceptual paradigm. Recognizing their qualities of holism and "double cultural relevance," they are functionally significant in teachers' repertoires for helping young Muslims think across paradigms and may contribute to both sociocultural continuity and more equal inter-epistemic interaction in heterogeneous societies.

**Keywords:** teacher education, child development, spiritual development, instruction, Islamic schools, Muslim educators

## INDIAN JOURNAL OF GENDER STUDIES

1. Muralidhar, S. (2022, March 25). The Legacy of the Life and Work of Lotika Sarkar. *Indian Journal of Gender Studies*, 29(2), 168–198. <https://doi.org/10.1177/09746862221082174>

**Abstract:** Based on a talk by the author, the article seeks to sketch the work and contribution of Professor Lotika Sarkar, the first woman law teacher of the Delhi University. A much sought after teacher, with a progressive outlook, Professor Sarkar mentored several generations of law scholars, teachers and judges. The article speaks of Professor Sarkar’s seminal contribution as member of the Committee on the Status of Women in India. Her chapter on ‘women and the law’ formed a significant part of the Committee’s 1975 report. Professor Sarkar joined three other eminent law teachers in penning an Open Letter to the Chief Justice of India, on September 16, 1979, in the wake of the *Tukaram* case. This letter paved the way for significant changes in law relating to custodial rape. The issues that Professor Sarkar worked on are of contemporary relevance to any serious legal scholar looking for a reference point, and the right questions to ask.

**Keywords:** Law teaching, women’s movement, women’s studies, marital rape, Law Commission of India, Status of equality report, Open Letter on the Mathura case

2. Kanjilal, A. (2022, March 21). Narrating Legal Reform: The Open Letter and the Anti-rape Movement in Perspective. *Indian Journal of Gender Studies*, 29(2), 199–221. <https://doi.org/10.1177/09715215221082178> s

**Abstract:** This article examines a foundational moment in the history of the women’s movement in India and its engagement with the law: the open letter to the Supreme Court written in 1979 by four scholars of the law—Upendra Baxi, Lotika Sarkar, Raghunath Kelkar and Vasudha Dhagamwar. As part of an effort to commemorate Lotika Sarkar’s work and legacy, this article looks at the letter as an event embedded in a certain history of feminist mobilisation and legal reform, of which Lotika Sarkar remains an integral part. It attempts to understand and narrativise the contiguous political climate within which the letter was written, the legal critiques that it espoused, the kind of politics and affiliations it led to, the governmental responses it evoked and the new categories and concepts it introduced to the jurisprudence of sexual offences in India.

**Keywords:** Mathura, rape law, open letter, Lotika Sarkar, Upendra Baxi, Seema Sakhara, legal reform, criminal law, sexual offence, custodial rape, police station

3. Rao, M. (2022, April 2). Iron in the Soul: Two-Child Norm in Population Policies Again. *Indian Journal of Gender Studies*, 29(2), 229–235. <https://doi.org/10.1177/09715215221082185>

**Abstract:** In July 2021, Uttar Pradesh announced a population policy, Draft Uttar Pradesh Population Control, Stabilisation and Welfare Bill, 2021, that was astoundingly thoughtless, even as it was demographically unnecessary. That Assam and Uttar Pradesh have joined the long list of dismal states that advocate a stringent two-child norm in population policy is only reflective of how unthinking and thoughtless our policy planners are. They perhaps reflect carefully thought-out political strategies to weaponise demography, demonise Muslims, and consummate a Hindu vote bank? These policies ignore the fact that a sustained fertility decline is visible all over the country. Indeed the rate of decline of the fertility among Muslims is greater than among Hindus.

**Keywords:** Total fertility rate, two-child norm, disincentives, NHRC, neo-Malthusian, demographic transition

4. Bahttacharyya, A. (2022, March 21). ‘Voluntarily Childless’: An Auto-ethnographic Account of a Man’s Struggles in India. *Indian Journal of Gender Studies*, 29(2), 236–247. <https://doi.org/10.1177/09715215221082187>

**Abstract:** This article is an account of the struggles of a man in a patriarchal cultural context, where the idea of childfree men is despised and regularly confronted. Autoethnography is a method and a means to story-telling not only of the struggles that a man faces but also is a living document of the interactions, relationships, acquaintances and family regarding a choice over voluntary parenthood. The idea of voluntary childless men is a rarity in Indian cultural context of compulsory motherhood, especially in a pronatalist culture. Women’s struggles have been documented but it is rarely that a man’s position is located.

**Keywords:** Childfree, masculinity, masculinities and voluntarily childless, voluntary childlessness in India, auto-ethnography, patriarchy and men

5. Ray, S., & Mukherjee, S. (2022, March 21). Technology, Gender and Fishing in an Odisha Village. *Indian Journal of Gender Studies*, 29(2), 248–257. <https://doi.org/10.1177/09715215221082177>

**Abstract:** The introduction of a new fishing technology in a small riverine village of Odisha resulted in paradoxical socio-economic outcomes. The fresh and flowing water pisciculture through the innovative Pen technology, which was based on an enclosure aquaculture system, bound from all sides by a close-knit row of multiple pens, improved productivity, income and employment levels of the fishing community. But the new technology also aggravated extant gender inequalities in the village, located on the banks of the river Mahanadi. The gendering of access to, control over and use of Pen culture in the fishing village of Naraj decided the winners and losers in this technological change. Systematic social closure and institutional bias not only ensured the exclusion of

fisherwomen from accessing and utilising the new productive technology and related resources in Naraj but also reinforced the traditional male domination in the fishery sector.

**Keywords:** Fishery, Pen culture, Kaibarta, Mahandi, Naraj

6. Swathisha, P., & Deb, S. (2022, March 25). Challenges Faced by Female Commercial Sex Workers in Puducherry, India: A Qualitative Inquiry. *Indian Journal of Gender Studies*, 29(2), 258–272. <https://doi.org/10.1177/09715215221082180>

**Abstract:** Sex work is considered one of the oldest professions in the world. In India, selling sex in private is legal, while all other activities related to sex work, such as pimping, brothel-keeping, are considered to be illegal. Despite their vulnerability to HIV and other sexually transmitted infections, the research has been less focused on the other challenges faced by sex workers. This article aims to understand the major challenges faced by female commercial sex workers (CSWs) through a qualitative study covering 15 CSWs who work in Puducherry Union Territory in South India. The data were collected by using an in-depth interview guide, and the case study method. Thematic analysis was employed to analyse the data. The article discusses in detail the challenges CSWs face in terms of economical, psychological and social spheres of their lives.

**Keywords:** Commercial sex work, female sex worker, challenges, Puducherry

7. Godbole, G. (2022, April 17). Gendered Impacts of Increasing Land Sale in Western Maharashtra, India. *Indian Journal of Gender Studies*, 29(2), 273–285. <https://doi.org/10.1177/09746862221082182>

**Abstract:** This article presents a nuanced understanding of the contemporary phenomenon of increasing land sale in Western India and its impacts on a rapidly changing social context. It focuses on perspectives of rural women who often lack a voice in matters related to land. The research was undertaken in Maval *tehsil* (administrative unit) of Pune district, Maharashtra, where the incidence of land sale has increased in the last few years. The article explores the perceived impacts of land sale on rural society in the region. Physical changes such as fencing have affected sanitary practices, collection of fuel wood and fodder and access routes. Individualisation of property rights has resulted in conflicts within patrilineal systems as well as influenced the overall social fabric of village life.

**Keywords:** Land sale, rural women, property, Maharashtra

## INTELLECTUAL AND DEVELOPMENTAL DISABILITIES

1. Rosenthal, E., Parish, S. L., Ransom, C., Smith, L. D., & Mitra, M. (2022, July 22). Formal and Informal Supports for Women With Intellectual and Developmental Disabilities During Pregnancy. *Intellectual and Developmental Disabilities*, 60(4), 261–272. <https://doi.org/10.1352/1934-9556-60.4.261>

**Abstract:** This article explores the role of formal and informal supports for women with intellectual and developmental disabilities (IDD) throughout their pregnancy, childbirth, and postpartum experiences. Data from qualitative interviews with women with IDD ( $n = 16$ ) were analyzed. Results showed that formal supports aided in planning, transportation, advocacy, and providing emotional support throughout pregnancy. Informal supports helped with errands, comfort, and emotional encouragement. The community surrounding these women facilitated communication with providers, self-empowerment regarding health choices, and increased preparedness for parenthood. Findings indicate the importance of encouraging and sustaining both formal and informal supports during pregnancy, childbirth, and postpartum to improve pregnancy and parenting experiences for women with IDD.

**Keywords:** pregnancy, intellectual and developmental disabilities, formal supports, informal supports

2. Boamah, D. A., & Barbee, A. P. (2022, July 22). Prevalence of Secondary Traumatic Stress Among Direct Support Professionals in Intellectual and Developmental Disabilities Field. *Intellectual and Developmental Disabilities*, 60(4), 273–287. <https://doi.org/10.1352/1934-9556-60.4.273>

**Abstract:** Direct support professionals (DSPs) are deemed by existing literature as vital support to persons with intellectual or developmental disabilities (IDD). They may be exposed to the traumatic experiences of people with IDD with potential psychological implications. Secondary traumatic stress (STS) has been studied among related professionals across human services, but little is known among DSPs. The current study examines the prevalence of STS in a sample of DSPs. The results suggested that DSPs are exposed to traumatic experiences, and exposure to a greater number of traumatized clients is significantly correlated with symptoms of STS. At least 12.4% of DSPs in this sample met the diagnostic criteria for experiencing post-traumatic stress disorder (PTSD) symptoms. Also, results suggest STS differences in DSPs based on demographics.

**Keywords:** compassionate fatigue, PTSD, secondary trauma, vicarious trauma, IDD workforce

3. West, A. L., & Dibble, K. E. (2022, July 22). Evidence-Based Early Home Visiting for Mothers and Parents With Intellectual Disability: Home Visitor Perceptions and Practices. *Intellectual and Developmental Disabilities*, 60(4), 288–302. <https://doi.org/10.1352/1934-9556-60.4.288>

**Abstract:** Evidence-based maternal, infant, and early home visiting (EBHV) is a potential strategy to support parent and child health and well-being among families headed by a parent with an intellectual disability (ID). Little is known about the capacity of EBHV programs to meet the needs of parents with ID effectively. This study examined home visitor practices and perceptions of services for parents with ID. Home visiting staff recruited from a national practice-based research network participated in web-based surveys. Practices and perceptions varied widely across sites and were associated with home visitor knowledge and self-efficacy and site implementation supports, such as policies, curricula, and community collaboration. More work is needed to understand and strengthen EBHV services for parents with ID.

**Keywords:** home visiting, maternal and child health, parenting, intellectual disability

4. Karns, C. M., Todis, B., Glenn, E., Glang, A., Wade, S. L., Riddle, I., & McIntyre, L. L. (2022, July 22). Seeking Out Social Learning: Online Self-Education in Parents of Children With Intellectual and Developmental Disabilities. *Intellectual and Developmental Disabilities*, 60(4), 303–315. <https://doi.org/10.1352/1934-9556-60.4.303>

**Abstract:** Supportive, informed parenting is critical to improve outcomes of children who experience intellectual and developmental disabilities (IDD). Parents want to learn about their child's condition, needs, and strategies to improve family life. The internet is a valuable resource, but how parents evaluate and apply information is unknown. We conducted focus groups to understand how parents use internet resources to learn about their children with IDD. Parents described using the internet to access information from trusted sources, find examples to apply their knowledge, and seek social support. Social learning theory, which posits that cognitive, behavioral, and social processes influence each other to support real-world learning, could provide a theoretical framework for unifying these findings and for designing efficacious online interventions.

**Keywords:** social learning, parent, qualitative, internet, online

5. Baumann, S. D., Ronkin, E., Roach, A. T., Crenshaw, M., Graybill, E. C., & Crimmins, D. B. (2022, July 22). To Connect and Educate: Why Families Engage in Family-Professional Partnership Training Experiences. *Intellectual and Developmental Disabilities*, 60(4), 316–333. <https://doi.org/10.1352/1934-9556-60.4.316>

**Abstract:** Successful family-professional partnerships (FPP) have been shown to positively impact both satisfaction with care and health outcomes for children with disabilities and their families. Many healthcare training programs have recognized the benefit of FPP training and often include learning experiences that feature families as teachers or mentors. However, most research on FPP training has focused on professionals' experiences, and not on families' experience in the roles of mentors and experts. The Leadership Education in Neurodevelopmental and Related Disabilities (LEND) program is a graduate-level interdisciplinary training program with sites across the country. LEND programs train future healthcare and service professionals in the

disability field and often utilize a Family Mentor Experience (FME) as one aspect of their training. This study used qualitative interviews to examine the experiences of eight family mentors who worked with trainees in one LEND program. Overall, the family mentors expressed positive views regarding the FME, describing how it allowed them to connect with trainees, other families, and community resources, as well as educating trainees. Family mentors also identified several facilitators and barriers to participation. Study findings provide information on the FFP's impact on family mentors and guidance on how programs can support sustainable, effective FPP experiences.

**Keywords:** families, interdisciplinary training, developmental disabilities

6. Matthews, A., Ziegler, M., Mayberry, M., Owen-DeSchryver, J., & Carter, E. W. (2022, July 22). Scaling Up a Peer-Mediated Program Statewide: Lessons Learned Through Peer to Peer. *Intellectual and Developmental Disabilities*, 60(4), 334–344. <https://doi.org/10.1352/1934-9556-60.4.334>

**Abstract:** Peer-mediated interventions are a powerful and practical way of promoting the social relationships, learning, and inclusion of students with disabilities. In this article, we describe one state's efforts to scale up a research-based, peer-mediated program called Peer to Peer throughout Michigan. Among the more than 700 schools that now offer this program, as many as 18,000 peers are involved in supporting nearly 5,000 schoolmates with autism and other developmental disabilities in their learning and relationships. We share our perspectives on eight key factors that have contributed to the growth and widespread adoption of Peer to Peer over the last 20 years. We discuss enduring challenges in this long-haul work and conclude with recommendations for future research focused on schoolwide peer-mediated programs.

**Keywords:** peer partner programs, peer-mediated interventions, autism spectrum disorder, intellectual disability, scaling up

## INTERNATIONAL JOURNAL OF EDUCATIONAL DEVELOPMENT

1. Zhou, J., Du, P., Zhao, W., & Feng, S. (2022, July). Skill requirements and remunerations in the private teacher labor market: Estimations with online advertisements in China. *International Journal of Educational Development*, 92, 102600. <https://doi.org/10.1016/j.ijedudev.2022.102600>

**Abstract:** Over the past decade, recruitment in China's labor market has rapidly shifted from offline to online, generating a large number of online advertisements that allow people to study the expectations of employers. In this study, more than 130,000 online advertisements for K-12 teachers were collected to study the requirements and remuneration of China's teacher labor market in the private sector. The data were analyzed through estimations of multiple and quantile regressions. The results indicate that having a postsecondary diploma is a minimum prerequisite for being a teacher, social-emotional skills are highly demanded, and higher-order cognitive skills are highly rewarded in the private teacher labor market. The results also reveal the heterogeneity in the teacher labor market in terms of requirements and remuneration of skills and a pattern that skills complement higher degrees but are alternative to lower degrees in their remunerations.

**Keywords:** Skill requirements; Remunerations; Online job advertisement; Labor market

2. Atuhurra, J., & Kaffenberger, M. (2022, July). Measuring education system coherence: Alignment of curriculum standards, examinations, and teacher instruction in Tanzania and Uganda. *International Journal of Educational Development*, 92, 102598. <https://doi.org/10.1016/j.ijedudev.2022.102598>

**Abstract:** While instructional coherence is important for student learning, structured analysis of such coherence, especially in low- and middle-income countries and at a systems level, is rare. We use an established methodology, the Surveys of Enacted Curriculum, and apply it in Tanzania and Uganda to systematically analyze and quantify the content and coherence of the primary curriculum standards, national examinations, and actual teaching delivered in the classroom. We find high levels of incoherence across all three instructional components. In Uganda, for example, only four of the fourteen topics in the English curriculum standards appear on the primary leaving exam, and two of the highest-priority topics in the standards are completely omitted from the exams. Teachers tend to cover broad swathes of content and levels of cognitive demand that are not well aligned with either the curriculum standards or exams. An exception is Uganda mathematics, for which standards, exams, and teacher instruction are all well aligned. The SEC methodology can be used as a diagnostic tool, helping education systems identify areas of instructional (in)coherence and informing efforts to improve coherence for learning.

**Keywords:** International education; Instructional coherence; Literacy; Mathematics; Curriculum standards

3. Lim, Y., & Park, H. (2022, July). Who have fallen behind? The educational reform toward differentiated learning opportunities and growing educational inequality in South Korea. *International Journal of Educational Development*, 92, 102599. <https://doi.org/10.1016/j.ijedudev.2022.102599>

**Abstract:** The Korean education has gone considerable reforms since the early 2000s toward more individualized and differentiated learning opportunities. We examine how students' math performance changed in the midst of the educational reform. The OLS regression shows that the overall level of math performance deteriorated among 10th graders educated in the reformed system than their counterparts before the reform. The performance disparity by family SES increased after the reform. The quantile regression analysis offers additional insights: the declining performance after the reform was notable among low-achieving students, while the stronger influence of family SES appeared among students scoring on/above the median.

**Keywords:** Educational reforms; Academic performance; Differentiated learning opportunities; Quantile regression; Educational inequality

4. Li, Y., Teng, W., Tsai, L., & Lin, T. M. (2022, July). Does English proficiency support the economic development of non-English-speaking countries? The case of Asia. *International Journal of Educational Development*, 92, 102623. <https://doi.org/10.1016/j.ijedudev.2022.102623>

**Abstract:** In this study, the relationship between the English proficiency and economic development of Asian countries is analyzed using panel data regression. The results indicate that English proficiency exerts a significant effect on economic development, but the effect is fully mediated by economic policies. Additionally, moderation effect analysis reveals that the policy of English as an official language is not a determinant of economic development for high-income Asian countries. Therefore, non-English-speaking countries with no history of colonization by an English-speaking country should prioritize English education reforms, which are more practical than enacting a bilingual nation policy.

**Keywords:** Bilingual nation; Economic development; English education; English proficiency; Human development; Language policy

5. Patel-Campillo, A., & García, V. S. (2022, July). Breaking the poverty cycle? Conditional cash transfers and higher education attainment. *International Journal of Educational Development*, 92, 102612. <https://doi.org/10.1016/j.ijedudev.2022.102612>

**Abstract:** This paper analyses the effects of the Peruvian 2005 Juntos Conditional Cash Transfer, program on higher education attainment and by gender. Based on the Young Lives Survey and using matching techniques, we find that Juntos has a positive effect on higher education attainment. Recipients are 8.5 percentage points more likely to attain technical studies, and this positive result remains regarding the matching technique used. Moreover, after controlling for community and cognitive test variables, recipients are

11.4 percentage points more likely to attain university studies. The positive effect of Juntos, however, is only for men and not for women revealing a gender gap in higher education attainment among Juntos recipients.

**Keywords:** Education; Gender; Inequality; CCTs; Peru; Lifecourse

6. Bray, M., & Ventura, A. (2022, July). Multiple systems, multiple shadows: Diversity of supplementary tutoring received by private-school students in Dubai. *International Journal of Educational Development*, 92, 102624. <https://doi.org/10.1016/j.ijedudev.2022.102624>

**Abstract:** Dubai has a unique overall structure of educational provision in which 89% of students attend private schools serving multiple nationalities. About half of these students receive supplementary tutoring, widely known in the literature as shadow education. Different school systems within Dubai have different shadows, shaped by various factors including curricular demands and the cultures of the learners. Some supplementary tutoring is received within the schools, and some externally. Patterns of school-provided tutoring are shaped by the operators' business models. Some schools charge high fees and include supplementary tutoring within their packages, while others charge lower fees and require separate payments for tutoring. Further variations are caused by the policies of school principals, thus indeed forming multiple systems with multiple shadows. Particularly employing interview data from 18 schools, the paper draws on Dubai's unique features to make conceptual contributions to wider literature about the ways in which curricula, cultures, business models, and school-level administrations shape shadow education provision.

**Keywords:** Dubai; Shadow education; Private tutoring; Private schooling; UAE

7. Liu, H., Fernandez, F., & Dutz, G. (2022, July). Educational attainment, use of numeracy at work, and gender wage gaps: Evidence from 12 middle-income countries. *International Journal of Educational Development*, 92, 102625. <https://doi.org/10.1016/j.ijedudev.2022.102625>

**Abstract:** Prior research on educational, numeracy, and wage gaps tends to focus on high income, countries. However, achieving the United Nation's Sustainable Development, goals for education and gender equality requires focusing on middle-income countries., In this study, we examine gender gaps in educational attainment, use of numeracy skill, in the workplace, and wage inequality in 12 middle-income countries. By analyzing, data from the World Bank's Skills Toward Employment and Productivity (STEP) study, we find that educational attainment explains differences in numeracy skill use, as well, as independently influences the gender wage gap. Our analyses also indicate that in, four countries examined in this study, a one-unit increase in women's engagement with, numeracy tasks is positively correlated with a 5% increase in women's wage. In, addition, this study suggests that unlike in the OECD, in these middle-income countries, investigated, the roots of gender wage gaps lie in forces even before women entering, the labor market. In the context of Sustainable Development Goals, this paper provides, new

evidence about the importance of improving gender equality in education and, skills across middle-income countries to fulfill SDGs 4 and 5.

**Keywords:** Education; Use of numeracy skills at work; Gender wage gap, Middle-income countries; SDG4; SDG5

8. Pesambili, J. C., Sayed, Y., & Stambach, A. (2022, July). The World Bank's construction of teachers and their work: A critical analysis. *International Journal of Educational Development*, 92, 102609. <https://doi.org/10.1016/j.ijedudev.2022.102609>

**Abstract:** This article examines how World Bank (WB) policy texts discursively constitute teachers and their work as functioning according to a circumscribed set of teaching approaches, while subjugating their reflexive and autonomous professional identities. But neither WB texts nor teacher images within them provide robust accounts of the realities of teachers and their work. What emerges are tropes of policy reforms in teachers and their work arguing for greater regulations underpinned by accountability and performativity regimes. In engendering scepticism of teachers' professional abilities, WB policy discourses reveal an ambivalence about teachers as providers of equitable and quality education: seeing them as a problem while begrudgingly treating them as a solution to the very reforms authorised in the WB policies.

**Keywords:** Governance Teachers Education policy World Bank Global South

9. Fincham, K. (2022, July). Syrian refugee women's negotiation of higher education opportunities in Jordan and Lebanon. *International Journal of Educational Development*, 92, 102629. <https://doi.org/10.1016/j.ijedudev.2022.102629>

**Abstract:** The Syrian civil war is considered to be one of the worst humanitarian crises of modern times. The war has resulted in the displacement of more than 5 million refugees into neighbouring countries, and most of these refugees are above the age of secondary education (UNHCR 2020). Returning to education is one of the key ways in which young refugees attempt to rebuild their lives in exile. However, few research studies have focused on refugees, gender and higher education. In particular, there is a dearth of research which has specifically explored the challenges young female refugees face as they negotiate gender norms in relation to higher education within displacement settings. Using empirical qualitative research, and building on previous scholarship related to gender and education in postcolonial and refugee contexts, this paper explores how young female Syrians negotiate gender norms as they engage with higher education opportunities made available for refugees within the context of exile in Jordan and Lebanon.

10. Ceron, F. I., Bol, T., & van de Werfhorst, H. G. (2022, July). The dynamics of achievement inequality: The role of performance and choice in Chile. *International Journal of Educational Development*, 92, 102628. <https://doi.org/10.1016/j.ijedudev.2022.102628>

**Abstract:** Research on education inequalities has long established the relationship between the social composition of schools and achievement levels. However, the empirical study of the social processes in choosing schools and their potential effects on achievement inequalities has often been neglected. This article investigates the extent to which such social processes, related to parents' educational preferences and expectations, influence the development of students' achievement throughout their schooling career, as a channel of transmission of social inequality. Using longitudinal census data from Chile, which allows us to observe students' achievements between the 4th and 10th grades, we find support for the claim that the development of achievement inequalities operate partly through well-off parents' educational preferences and expectations. Moreover, these preferences and beliefs explain most of the social composition effect of schools on achievement inequalities. We conclude that choice processes should be considered as an integral part of theories aimed to explain achievement inequalities as a dynamic process.

**Keywords:** Achievement inequality; Primary effects; Secondary effects; School effects; Private education

11. Eba, M. Y., & Geta, M. B. (2022, July). Parental kindergarten school choice in Addis Ababa: The policy implications. *International Journal of Educational Development*, 92, 102626. <https://doi.org/10.1016/j.ijedudev.2022.102626>

**Abstract:** The purpose of this study was to find out whether parents sending their children to community-based, faith-based, and privately owned kindergartens significantly differ in their perception about the determinants of Kindergarten (KG) school choice. Empirical data were collected through a three-scale closed-ended questionnaire items from 118 parents – selected through stratified proportional sampling from six sample KG schools. The data for each item were inserted into a  $3 \times 3$  contingency table and analyzed by employing descriptive statistics and chi-square ( $\chi^2$ ) test. Findings of this study showed that parents of the three school type did not significantly differ in their perception on some school choice parameters like: school proximity, childcare and safety, and teachers' competence and ethics. On the other hand, playgrounds and instructional materials, foreign language instruction, moral/religious instruction, and school transportation service were found as high priorities in school choice for parents of private KG children. Similarly, moral/religious instruction, and playgrounds and instructional materials were high priorities for faith-based KG parents. School provision of free lunch and school fee appeared as the priorities in making school choice for community-based KG parents. These findings do have significant implications in designing policy responses to the varied parental preferences and expectations of KG schooling. The findings also hinted the need for regulating and setting minimum standards for all KG education providers in urban Ethiopia. However, further research is needed to more understand the issue involving wider samples, other related variables, and using qualitative data as well.

**Keywords:** School choice; Parental choice; School type; Kindergarten; Addis Ababa

## INTERNATIONAL JOURNAL OF EDUCATIONAL RESEARCH

1. Obermeier, R., & Gläser-Zikuda, M. (2022). Development of scholastic well-being in the course of the 5th grade in secondary education. *International Journal of Educational Research*, 114, 101978. <https://doi.org/10.1016/j.ijer.2022.101978>

**Abstract:** Scholastic well-being is highly relevant, as it is connected with achievement and successful coping with critical life events. Since well-being in school is a multidimensional construct, it is necessary to analyze trajectories of these multiple dimensions to get a deeper understanding of changes and influencing factors. The empirical base for differential development of scholastic well-being for girls and boys, students with and without migration background and students attending medium and academic educational tracks is inconsistent. Additionally, there is a lack of findings regarding students' well-being in co-educational versus single-sex schools. Therefore, the current study aims at analyzing changes in all six dimensions of scholastic well-being during the 5th grade for specific groups of students (boys and girls, students with and without migration backgrounds, students attending medium and academic educational tracks and in co-educational versus single-sex schools). Based on a sample of  $N = 1,042$  students in Catholic schools (80.5% female, 25.8% with migration background, 48.9% in a medium educational track, 54.3% in single-sex schools) who participated in three measurement time points, longitudinal multi-level analyses were calculated. Results reveal a decrease in all dimensions of scholastic well-being over time. Additionally, they illustrate the causal role of time-stable covariates, such as gender, educational track, migration background, and co-educational versus single-sex schooling. The results show slightly different trajectories for male and female students. Thus, the presented study builds upon results of previous studies by providing further information on short-term changes of scholastic well-being and different trajectories for specific groups of students.

**Keywords:** Scholastic well-being; Gender differences; Co- versus single-sex education; Migration background; Disparities in socialization

2. Tran, L. T., Blackmore, J., Bui, H., Hoang, T., Beavis, C., Rowan, L., McCandless, T., Chou-Lee, M., & Hurem, A. (2022). "Building the business model" or "Broadening our international perspectives"? Staff positioning on the values of hosting international students in the Australian school sector. *International Journal of Educational Research*, 114, 101975. <https://doi.org/10.1016/j.ijer.2022.101975>

**Abstract:** This article focuses on school staff' perspectives about the value of international students. The positioning of international students by the interviewees shows how hosting this cohort can assist to boost schools' symbolic positioning in international education formed by labelling the school as 'culturally diverse', 'inclusive', 'international' and 'global'. But there seems to be a gap between symbolic positioning on the one hand and the capitalization of international students on the other hand as valuable resources to realise the internationalisation of schools. The article provides insights into the perceived values of international students and the barriers to achieving these potential benefits.

**Keywords:** International students; International education; Secondary schools; Australia; Positioning theory

3. Li, M., Liu, H., & Huang, W. C. (2022). A Historical Investigation and Classification Analysis of Seven Controversies on the Reform and Abolition of the 1300-year Chinese Imperial Examination System. *International Journal of Educational Research*, 114, 101976. <https://doi.org/10.1016/j.ijer.2022.101976>

**Abstract:** The Chinese imperial examination system has witnessed seven controversies on its reform and abolition throughout its 1300-year-old history. With a historical investigation and classification analysis, result showed that the seven controversies mainly focused on three pairs of contradictions. They are controversies on the content and format of imperial examinations, controversies on choosing talents through imperial examination or recommendation, and controversies on selecting talents through imperial examination or schooling system. The main implications include that the content of national examination should be beneficial to talent selection, the format of national examination should be conducive to efficient talent selection, and the national examination should uphold social equity and fairness and especially should be conducive to social class mobility.

**Keywords:** Chinese Imperial Examination System; Reform; Abolition; Controversies; Talent Selection

4. Dewhirst, C. (2022). Professional identities: Thirdspace and professional development. *International Journal of Educational Research*, 114, 101979. <https://doi.org/10.1016/j.ijer.2022.101979>

**Abstract:** This study uses spatial analysis and third space to explore the experiences of teachers undertaking a Masters-level Continuing Professional Development (CPD) programme. Eight Respondents were invited to bring objects to their interview that represented significant aspects of their practice in relation to the course. These objects afforded an exploration of respondents' views, experiences and consideration of the impact of the programme on their professional identities. How policy and practice are inter-related is explored. This allows for a socio-material take on the CPD process as one whereby people, as well as objects, such as 'standards', play equally important roles. This study considers the theory of Thirdspace to analyse and theorise how CPD activity had impacted upon the practices.

5. Yoon, S. H. (2022). Gender and digital competence: Analysis of pre-service teachers' educational needs and its implications. *International Journal of Educational Research*, 114, 101989. <https://doi.org/10.1016/j.ijer.2022.101989>

**Abstract:** The purpose of this study was to analyze educational needs of pre-service teachers' digital competence by gender. 157 pre-service teachers at a university in South Korea responded to the on-line survey. For data analyses, the researcher used the paired-samples *t*-test, Borich needs assessment analysis, and the locus for focus model. Results revealed that male and female pre-service teachers prioritized sub-competences

differently. Male pre-service teachers recognized five sub-competences in four areas of digital competence. Female pre-service teachers identified seven sub-competences in five areas as a priority. Three sub-competences such as reflective practice, guidance, and assessment strategies were included in educational needs for both males and females. The researcher discusses implications for improvement of digital competence and pre-service teacher education.

**Keywords:** Pre-service teacher education; Higher education; Gender differences; Comparative analysis; Borich needs assessment model

6. Plage, S., Kuskoff, E., Hoang, N. P., & Povey, J. (2022). Educational participation of primary school children with cancer from a Life Course perspective: A critical review of the literature. *International Journal of Educational Research*, 114, 101990. <https://doi.org/10.1016/j.ijer.2022.101990>

**Abstract:** Adult survivors of childhood cancer experience poorer long-term socioeconomic outcomes, yet the influence of educational participation during primary school years is not well understood. This review synthesizes empirical findings from seventy-four quantitative and qualitative peer-reviewed studies, published from 2000-2019 and identified through a search of nine databases. The findings point to the following recommendations to improve policy and practice: provision of teaching and learning away from school; focus on student-centeredness; strengthening home-school-hospital partnerships; facilitation of teacher and peer acceptance; school re-entry support; resources and funding; and advocacy. The findings suggest that a Life Course lens is appropriate to conceptualize the role of educational participation for mitigating long-term impacts of childhood cancer during developmental transitions from childhood to adolescence and adulthood.

**Keywords:** Educational participation; Primary school; Literature review; Childhood cancer survivorship; Socioeconomic outcomes; Life course studies

7. Melián, E., & Meneses, J. (2022). Getting ahead in the online university: Disclosure experiences of students with apparent and hidden disabilities. *International Journal of Educational Research*, 114, 101991. <https://doi.org/10.1016/j.ijer.2022.101991>

**Abstract:** Disabled students must communicate their condition to the university to access accommodations, but many do not disclose or do so late. We explored identity management and disclosure decisions in a sample of 34 students from a Spanish open university through email interviews. Results show that these students carefully assess disclosing their disability due to the emotional risks involved and that the administrative process poses an obstacle. Students with apparent disabilities (i.e., physical and sensory) emphasize self-sufficiency and normalization of their presence, while students with hidden disabilities (i.e., mental disorders and learning challenges) focus on avoiding stigma and increasing credibility. Online universities should acknowledge the distinct needs derived from the different types of disabilities, provide personalized support, and facilitate disclosure procedures.

**Keywords:** Online higher education; Students with disabilities; Apparent disabilities; Hidden disabilities; Disability disclosure

8. Song, Y., Cao, J., Yang, Y., & Looi, C. K. (2022). Mapping primary students' mobile collaborative inquiry-based learning behaviours in science collaborative problem solving via learning analytics. *International Journal of Educational Research*, 114, 101992. <https://doi.org/10.1016/j.ijer.2022.101992>

**Abstract:** This article reports on a study focusing on understanding how primary students conducted collaborative inquiry-based learning (CIBL) supported by a mobile app during the COVID-19 pandemic when all lessons were conducted online. Learning analytics (LA) were used to map students' behaviours in CIBL activities. One class with 35 students in Grade 4 participated in this study. Log data was collected and analysed using learning analytics with process mining techniques to understand groups' CIBL behaviours in a mobile learning environment. The findings revealed high- and low-performance groups' common and different features of CIBL behaviours. The research findings can help inform both teachers of making pedagogical refinement in the CIBL activity design, and researchers of developing scaffolding tools at different phases of CIBL on the mobile learning app to enhance students' collaborative problem-solving skills.

**Keywords:** Collaborative inquiry-based learning (CIBL); Science; Learning analytics; High- and low-performance groups; M-orchestrate app; collaborative problem solving

9. Machusky, J. A., & Herbert-Berger, K. G. (2022). Understanding online learning infrastructure in U.S. K-12 schools: A review of challenges and emerging trends. *International Journal of Educational Research*, 114, 101993. <https://doi.org/10.1016/j.ijer.2022.101993>

**Abstract:** The COVID-19 pandemic led to a rapid digitization of education in the United States. Before the pandemic, 1:1 computing initiatives, learning management systems, and professional development were in use. Students and teachers becoming reliant on technology when school buildings were closed showed the areas where eLearning technologies are effective and areas in which they need refinement in their design and implementation. In this paper, we address the history and current challenges in working with online learning infrastructure. We review standards prior to 2020 and then review technologies that were available during the initial phases of the pandemic. Finally, we discuss new tools, including our tool, for managing some of the network problems teachers faced while delivering content.

**Keywords:** Bandwidth; Chromebooks; Distance learning; Learning management systems; US; COVID-19

10. Taimur, S., & Onuki, M. (2022). Design thinking as digital transformative pedagogy in higher sustainability education: Cases from Japan and Germany. *International Journal of Educational Research*, 114, 101994. <https://doi.org/10.1016/j.ijer.2022.101994>

**Abstract:** There is an increasing emphasis on using transformative learning approach through pedagogies to make Higher Sustainability Education (HSE) more effective. The study explores how Design Thinking (DT) as a pedagogy can be conducive to transformative learning in the digital settings, in HSE, by incorporating the critical components of the Digital Transformative Pedagogy (DTP) framework. The study describes the design and implementation of two courses from universities in Japan and Germany and captures the participants' perspectives on their experiences. The research findings emphasize that DT pedagogy successfully incorporates all the components of the DTP framework in both cases (hybrid and digital settings) to set up learning processes and environment favorable for transformative learning experiences. The research can offer concrete practice, pathways, and lessons for curriculum development to bring transformative learning into digital teaching practice in HSE.

**Keywords:** Higher sustainability education; Design thinking; Transformative learning; Digital transformative Pedagogy

11. Kucirkova, N., & Kamola, M. (2022). Children's stories and multisensory engagement: Insights from a cultural probes study. *International Journal of Educational Research*, 114, 101995. <https://doi.org/10.1016/j.ijer.2022.101995>

**Abstract:** This study builds on child-centred early education models that emphasise active listening to children's voices and follow participatory research methods to accommodate children's expressions. We used the cultural probes method with eleven Norwegian 4-5-year-olds to elicit children's storytelling and multisensory engagement. The children were encouraged to tell a story using open-ended art-making materials provided in a "story box". Children's stories were analysed according to their structural elements with The Social Relationships in Children's Stories (SRCS) tool, and in relation to the intensity of children's engagement of their six senses (vision, hearing, touch, smell, taste and proprioception) during the activity. The SRCS analysis showed that children's stories centred on real characters performing commonly encountered acts, mostly in rural settings (e.g., 'a man pushing a tree' or 'A mother and a baby relaxing in the forest'). Children engaged their senses selectively, in a sequence of different levels of intensity, with the visual and haptic engagement being the most intensively engaged senses during the story-tellings. Children's real-life stories that engage the hidden senses (olfaction, taste and proprioception) could enrich the methods and design of future education studies.

**Keywords:** Stories; Participatory research; Early childhood education; Sensory engagement; Multisensory learning

12. Ahmad, Z., & Al-Thani, N. J. (2022). Undergraduate Research Experience Models: A systematic review of the literature from 2011 to 2021. *International Journal of Educational Research*, 114, 101996. <https://doi.org/10.1016/j.ijer.2022.101996>

**Abstract:** Undergraduate research experiences (UREs) impart a great deal of knowledge to undergraduate students, enhance the research capital of institutes, and authenticate the country's educational outcomes. To effectively assimilate these benefits, the URE designers have proposed many different learning models. However, there is little work done to assess and compare the effectiveness of these varying learning models being adopted in various disciplines. Hence, this article provides an educational research review on the effective pedagogical models in URE to enhance the research experiences of undergraduate students. We initially screened 331 articles and finally compared 67 studies between 2011 and 2021 ranging in different disciplines to understand and weigh out the influence of these URE models with a special focus on the ones in STEM (science, technology, engineering, and mathematics) related fields. This study also indicates the factors that mediate a constructive relationship between students and specific URE models like the Course-based Undergraduate Research Experience (CURE) model in juxtaposing with other traditional and hybrid URE models. Most models have been implemented to biology-related fields and experienced in the United States (U.S.). This depicts a gap in research for the effective implementation of URE in other STEM fields and other countries. Moreover, the CURE model was found to be an effective practice providing large-scale research opportunities to students. However, it is majorly focused on the life sciences field and needs more extensive research in the other disciplines. Also, being comparatively a newer form of URE, there is room for more research in developing this model. While other traditional and hybrid models demonstrated positive characteristics, large reforms are needed for their efficient implementation. Finally, we summarize the strengths and limitations of the URE models from the last decade to highlight the practically successful models for future designers to be implemented in different disciplines.

**Keywords:** Undergraduate research experience; capacity building; educational reform; STEMCURE

13. Peruzzo, F., Ball, S. J., & Grimaldi, E. (2022). Peopling the crowded education state: Heterarchical spaces, EdTech markets and new modes of governing during the COVID-19 pandemic. *International Journal of Educational Research*, 114, 102006. <https://doi.org/10.1016/j.ijer.2022.102006>

**Abstract:** In this paper, we examine a set of complexly related education policy issues that concern changes to the form and technologies of the state, and changing modalities of government and processes of policy and service delivery, and concomitantly, the reagenting of education policy within extensive but exclusive policy networks. We also explore the role of the state in creating opportunities for business and social purpose organisations within the delivery and management of state education in response to the

ambitions of EdTech (Education Technology) companies seeking to sell their products within the state system. The time is that of COVID-19 and lockdown (2020-2021) and the case is the English Oak National Academy (ONA) – a national platform for remote teaching and learning resources that was conceived and created in England in April 2020, with funding from government and various philanthropists, and designed and run by a team of third sector and business policy entrepreneurs. Alongside and in relation to the ONA we consider a series of UK government policy papers on EdTech, interrogate the membership of the EdTech Leadership Group (ELG) and of the EdTech Advisory Forum.

**Keywords:** Policy networks; EdTech; Oak National Academy; Digital education governance; Policy entrepreneurs

14. Shi, J., Cheung, A. C., Zhang, Q., & Tam, W. W. Y. (2022). Development and validation of a social emotional skills scale: Evidence of its reliability and validity in China. *International Journal of Educational Research*, 114, 102007. <https://doi.org/10.1016/j.ijer.2022.102007>

**Abstract:** This study aimed to develop a brief student-reported social emotional skills scale to evaluate social emotional learning outcomes based on the CASEL framework. The original version of the social emotional skills scale consisted of 70 items which were mainly adopted from existing related scales. After two rounds of exploratory factor analysis with samples of 1,675 and 1,389 Chinese elementary students, a 5-factor and 38-item construct was refined. This construct was further supported with good fitness by confirmatory factor analysis with another sample of 891 students. Measurement invariances by grade and gender were roughly confirmed. Concurrent validity was supported by the correlation matrix between social emotional skills scale and the strength and difficulties questionnaire. Limitations and implications are finally discussed.

**Keywords:** Social emotional skills; CASEL model; Scale validation; Validity; Measurement invariance

15. Kolleck, N., & Schuster, J. (2022). Youth participation in global policy networks on climate change. *International Journal of Educational Research*, 114, 102002. <https://doi.org/10.1016/j.ijer.2022.102002>

**Abstract:** This study implements a mixed methods design based on social network analysis to analyse activities related to the participation of youth in international negotiations on climate change. We show that the participation of youth is, on the one hand, actively promoted by international organisations. On the other hand, youth form transnational social movements and explicitly oppose (inter)national organisations. Using social network analysis, we show that youth from both the Global North and the Global South can be identified as being central in these transnational networks, with those from the Global South focusing on bridging between different groups. Our findings further suggest that previous approaches to participation are limited in their ability to explain transnational forms of youth participation.

**Keywords:** Youth participation; Global networks; Social network analysis; Climate change education; United Nations framework on climate change (UNFCCC); Twitter

16. Jin, J. (2022). Ambivalent governance and the changing role of the state: Understanding the rise of international schools in Shanghai through the lens of policy networks. *International Journal of Educational Research*, 114, 102004. <https://doi.org/10.1016/j.ijer.2022.102004>

**Abstract:** The current literature demonstrates the commercialised orientations of international schools in China and the role of the global education industry and overseas governments. This paper, drawing on narratives of school principals and senior managers who experienced the rise of international schools in Shanghai and working with theoretical tools from policy network studies and policy sociology, demonstrates the powerful and pragmatic role of the state in shaping and shifting the beliefs and traditions of international school practices and policies, and a process of disrupted neoliberalisation. The findings indicate the complexities and ambivalences in such notions as education governance, neoliberalisation, and globalisation, and shed light on the localised modalities and assemblages embedded within specific Chinese education policy contexts.

**Keywords:** International schools; Policy networks; Policy trajectory; Education governance; China

17. Jones, S. L., Hall, T., Procter, R., Connolly, C., & Fazlagić, J. (2022). Conceptualising translational research in schools: A systematic literature review. *International Journal of Educational Research*, 114, 101998. <https://doi.org/10.1016/j.ijer.2022.101998>

**Abstract:** Since Stenhouse (1975) called for teachers to have ownership of research, there have been initial forays into teacher led research and evidence-based practice in schools. However, the notion of translational research in schools remains contested, in significant part because it still has not been rigorously conceptualised. This is an issue of increasing concern, in our rapidly developing world. Now, more than ever, we need research-informed education, to address the complex challenges faced by school communities, and those with the most significant role in supporting them: teachers. To address the gap in understanding how best to promote translational research in schools, this systematic literature review asked, what do innovative and impactful translational, teacher research infrastructures look like? By translational research, we mean a process of agentic and agonistic democracy within which teachers critically develop and, or use research to support their classroom practice. The purpose and focus of this paper therefore, is to present the current extent and form of translational research practices in schools by undertaking a comprehensive, systematic review of the published literature on the issue. We found that the potential for translational research in education can be considerably enhanced when five key themes are taken into consideration, these being: Teacher-Researcher Collaboration; Teachers as Researchers; Research Cultures in Schools; Teacher Agency; Sharing, Accessing and Utilizing Research. The notion of technology - as a theme in its own right - was notable by its absence. From the findings we have been able to propose a foundational framework of translational research in

schools. To date there have been no other systematic literature reviews on translational research in education, nor any frameworks proposed; and thus this paper addresses a significant gap in the field.

**Keywords:** Translational research; Teacher led research; Evidence informed practice; Knowledge mobilization; Teacher researcher practitioners; Research informed practice; School based research

18. Viseu, S. (2022). New philanthropy and policy networks in global education governance: the case of OECD's netFWD. *International Journal of Educational Research*, 114, 102001. <https://doi.org/10.1016/j.ijer.2022.102001>

**Abstract:** Based on network ethnography and social network analysis, this paper takes the Network of Foundations Working for Development (netFWD), created by the OECD in 2012, as an example of an emergent transnational network of global policy actors. By convening some of the world's most important private philanthropy providers, the network is pursuing a new philanthropy rationale in global education governance, more engaged on results, networking, skill development, and evaluation based on standardised data. The results show the OECD's central role in the network, acting as a place of knowledge production and social order, and that netFWD can provide an opportunity to expand new forms of political influence and enactment by international organisations and non-state actors in the global education governance.

**Keywords:** New Philanthropy; Policy Networks; Global Education Governance; Social Network Analysis; netFWD; OECD

19. Pulkkinen, J., & Rautopuro, J. (2022c). The correspondence between PISA performance and school achievement in Finland. *International Journal of Educational Research*, 114, 102000. <https://doi.org/10.1016/j.ijer.2022.102000>

**Abstract:** In the Programme for International Student Assessment (PISA), the key knowledge and skills needed in modern society are assessed. So far, however, little is known on the relationship between PISA performance and school achievement. Using Finnish PISA 2015 and 2018 data combined with the national register of education records, we studied whether there is correspondence between PISA performance and school achievement. The results showed that the correspondence between PISA performance and school achievement is moderate. The PISA proficiency scores correlated not only with the corresponding grades but also with the grades of other theoretical subjects, indicating that the PISA test assesses a wide range of school achievement. PISA proficiency was related to grades even after controlling for gender and SES.

**Keywords:** PISA; Achievement; Grades; Basic education; Gender; Socio-economic status

20. Rowe, E. (2022). The assemblage of inanimate objects in educational research: mapping venture philanthropy, policy networks and evidence brokers. *International Journal of Educational Research*, 114, 102005. <https://doi.org/10.1016/j.ijer.2022.102005>

**Abstract:** This paper draws on Ball et al.'s (2017) network ethnography, to investigate policy mobility and the assemblage of inanimate objects in educational research, in the form of an 'evidence broker'. It focuses on a national education research institute funded by the Australian Government, named the Australian Education Research Organisation (AERO). Positioned as essentially bipartisan and apolitical, AERO was incorporated in 2021 to accelerate the use of research evidence and set a 'national agenda'. As modelled on the UK's Education Endowment Foundation and the What Works Centre, it establishes important legislative precedents to collaborate with venture philanthropy. The policy network fundamentally reshapes the ecosystem including functionality of capital and power, translating things and ideas into policies that retain material affects.

**Keywords:** Policy networks; network ethnography; venture philanthropy; sociology of translation; evidence broker; inanimate object

21. Zakharia, Z., Menashy, F., & Shields, R. (2022). Policy networks in refugee education. *International Journal of Educational Research*, 114, 102003. <https://doi.org/10.1016/j.ijer.2022.102003>

**Abstract:** This paper presents a social network analysis of partnerships in refugee education and shows how relationships between organisations change in response to multiple crises, including political and economic crises, disaster, and COVID-19. We draw insights from an original database of 440 state and nonstate entities engaged in Syria refugee education in Lebanon (2018–2021). We find that partnerships in refugee education comprise a complex web of global, national, and local actors. The policy network arising from these partnerships reflects power inequities wherein international organisations hold most influence. Moreover, crises impact the network, which expands to include new private actors. While the COVID-19 pandemic is thought to accelerate localisation, our analysis suggests the durability of global power hierarchies in refugee education response.

**Keywords:** COVID-19; Lebanon; Localisation; Partnerships; Refugee education; Syria

22. Lee, S. J., Francom, G. M., & Nuatomue, J. (2022). Computer science education and K-12 students' computational thinking: A systematic review. *International Journal of Educational Research*, 114, 102008. <https://doi.org/10.1016/j.ijer.2022.102008>

**Abstract:** This systematic review examined how computer science (CS) education was implemented in schools and its efficacy for developing students' computational thinking (CT). Sixty-six papers were selected for this systematic review and analyzed for patterns in relation to the implementation of CS education in K-12 schools and its impact on the

development of students' CT skills. Although educational interventions have not always been successful in CS education, this review provides strong evidence that overall, CS education promotes the development of students' CT in the K-12 setting while improving their creative and critical thinking skills. We recommend early access to CS education, various innovative instructional approaches to CS education and appropriate support and guidance for student learning.

**Keywords:** Computer science education; Computational thinking; Programming; Systematic review; K-12

23. Ertesvåg, S. K., Vaaland, G. S., & Lerkkanen, M. K. (2022). Enhancing upper secondary students' engagement and learning through the INTERACT online, video-based teacher coaching intervention: Protocol for a mixed-methods cluster randomized controlled trial and process evaluation. *International Journal of Educational Research*, 114, 102013. <https://doi.org/10.1016/j.ijer.2022.102013>

**Abstract:** This protocol outlines a mixed-methods cluster randomized controlled trial (CRCT) in upper secondary schools that will investigate how video-based online coaching can support teachers' competences in teacher-student interactions (TSIs) and thereby improve student engagement and learning. The intervention will take place over a school year with at least 100 teachers and 2,000 of their students. During the implementation and one-year follow-up, we will conduct an extensive implementation and process evaluation (IPE) to understand the intervention's effects on TSI and student engagement and learning outcomes. This protocol outlines the background, design, intervention, and primary and secondary outcome measures as well as moderators.

**Keywords:** Mixed-methods cluster RCT; Teacher-student interactions; Student engagement; Study protocol

24. Otrell-Cass, K. (2022). Presenting a students' tale: The smartphone manifesto. *International Journal of Educational Research*, 114, 101999. <https://doi.org/10.1016/j.ijer.2022.101999>

**Abstract:** Smartphones are part of young people's lives from a relatively young age. However, smartphones are often banned in classrooms and parents, teachers, and school authorities still perceive the benefits of smartphones in schools with skepticism, indicating a distrust in young people and their ability to utilise this technology aptly. This article presents a manifesto on smartphones produced by a Danish primary school class when they were in grade nine (15-16 year-old students) and reports on the process of this preparation using data from a videography in a three-year study. The argument presented here questions research practices and shares a project that tries to give agency to young people through intentionality and purpose. The students' smartphone manifesto details students' views about the possibilities and problems of using smartphones and shares the participatory methodology of the research project.

**Keywords:** Smartphones; Students' voices; Video diaries; Youth culture; Manifesto

25. Jang, J., Yoo, H., & Rubadeau, K. (2022). How teacher collaboration profiles connect to literacy instructional practices: evidence from PISA 2018 outcomes for Korea. *International Journal of Educational Research*, *114*, 102010. <https://doi.org/10.1016/j.ijer.2022.102010>

**Abstract:** This study identifies profiles for teacher collaboration related to five instructional practices (direct instruction, adaptive instruction, initiation of reading strategies, stimulation of reading engagement, and feedback provision) among middle school literacy teachers in South Korea. PISA 2018 data were utilized for a latent profile analysis that revealed four profiles: High Collaboration, Moderate Collaboration, Low Collaboration, and Assessment-centered Collaboration. A notable finding was the existence of a substantial Assessment-centered Collaboration group, comprising teachers whose primary collaboration focus was assessment standards. Moreover, it was found that the use of all five instructional practices was significantly higher among the higher-collaboration groups. Teacher collaboration profiles can aid in establishing clear goals and targeted support for sustained, impactful professional learning.

**Keywords:** Assessment; Collaboration; Instructional practice; Latent profile analysis; Literacy; PISA

26. Hallin, A. E., Danielsson, H., Nordström, T., & Fälth, L. (2022). No learning loss in Sweden during the pandemic: Evidence from primary school reading assessments. *International Journal of Educational Research*, *114*, 102011. <https://doi.org/10.1016/j.ijer.2022.102011>

**Abstract:** The COVID-19 pandemic has led to worldwide school closures, with a risk of learning loss. Sweden kept primary schools open, but it is unknown whether student and teacher absence and pandemic-related stress factors affected teaching and student progress negatively. In this study, reading assessment data from 97,073 Swedish primary school (grades 1-3) were analysed to investigate potential learning loss. Results showed that word decoding and reading comprehension scores were not lower during the pandemic compared to before the pandemic, that students from low socio-economic backgrounds were not especially affected, and that the proportion of students with weak decoding skills did not increase during the pandemic. Study limitations are discussed. We conclude that open schools benefitted Swedish primary school students.

**Keywords:** COVID-19; Decoding; Reading comprehension; School closure; Reading development

## INTERNATIONAL RESEARCH IN GEOGRAPHICAL AND ENVIRONMENTAL EDUCATION

1. Alm Fjellborg, A., & Kramming, K. (2021, May 18). Sustainable development: Exploring gender differences in the Swedish national test in geography for grade 9. *International Research in Geographical and Environmental Education*, 31(3), 172–187. <https://doi.org/10.1080/10382046.2021.1927366>

**Abstract:** This paper provides an analysis of how Swedish 15-year-olds perform on the high-stakes national assessments in geography. It explicitly addresses which item characteristics produce differential item functioning (DIF) in favor of boys and girls respectively. The findings show that DIF occurs in favor of girls in items with constructed response and primarily with content on the social dimension of sustainable development (SD), while boys are more favored by content outside the field of SD. The conclusions drawn are that content that reaches higher levels of Bloom’s taxonomy favors girls, especially when the subject content concerns SD. This is important when analyzing the teaching and examination of sustainability issues in school.

**Keywords:** DIF; education; geography; large-scale assessment; national tests; sustainable development; Sweden

2. Cascante-Campos, A. (2021, August 4). Latin American geography education research trends in open access journals from the twenty-first century. *International Research in Geographical and Environmental Education*, 31(3), 188–204. <https://doi.org/10.1080/10382046.2021.1961061>

**Abstract:** Recent projects, declarations, and articles around the globe addressed the status and development of geography education, where the discipline is standing, and what should be done to enhance the quality and quantity of research. Nevertheless, the paucity of research and limited approaches in Latin America about the type of studies published has made difficult the promotion and development of research lines, or even more an international comparative perspective. Therefore, the aim of the study is to show the spatiotemporal trends and existing research lines in geography education, extracted from 1880 articles published in 140 open access journals within the region from 2000 to 2019. The findings showed a consistent growth of research especially after 2010, just a few journals gathering most publications, and the intraregional disparity among countries on the evolution of the number and type of studies. Although Latin American researchers increased the number of publications in all research lines, the scientific production has been more prolific in five topics: theories, philosophy and debates, teacher education, teaching methodologies, instructional materials and resources, and student’s learning. In contrast, studies on assessment, technologies, fieldwork, research practices, history and educational policies have received less attention from scholars.

**Keywords:** Latin America; geography education; research; themes; open-source journals

3. Fischer, F. (2021, September 3). “She just can’t break it down to the classroom. . .”: expert perspectives on German geography trainee teachers’ competencies and initial teaching. *International Research in Geographical and Environmental Education*, 31(3), 205–221. <https://doi.org/10.1080/10382046.2021.1973254>

**Abstract:** Despite the preparatory service as a second practical phase of teacher training, German secondary geography teachers often experience a *reality shock* at the beginning of their teaching careers. Teacher trainers, the teacher educators of the second phase, guide trainee teachers through their transition from university to school. This qualitative study provides beneficial insights on geography trainee teachers’ school practice from an expert point of view. Twenty-three teacher trainers from twelve different German states were interviewed. The data material was analysed with Mayring’s qualitative content analysis. It was found that trainee teachers’ preconditions vary massively, especially in terms of geography didactical knowledge (PCK). However, their average PCK preconditions seem to have improved over the last years. The teacher trainers perceive several subject-specific difficulties in the beginners’ lessons, e.g. didactic reduction or applying geography didactical theory. Furthermore, the empirical data reveals the experts’ perspectives on competencies of excellent geography trainee teachers. A need for a greater focus on actual teaching in initial teacher training as well as discrepancies between the different phases of geography teacher education are addressed at the end of the article.

**Keywords:** Geography teacher education; trainee teachers; teacher trainers; professional competence; reality shock; secondary school geography

4. Hanus, M., Tani, S., Béneker, T., & Höhnle, S. (2021, September 1). World-mindedness of young people during the rise in migration in Europe: a case study of Czechia, Finland, Germany and The Netherlands. *International Research in Geographical and Environmental Education*, 31(3), 222–241. <https://doi.org/10.1080/10382046.2021.1969791>

**Abstract:** During the 2015 sudden rise in migration movements in Europe, approximately 2.4 million refugees arrived in Europe and 1.2 million asylum applications were received in the European Union countries. We were interested in finding out whether these rapid changes and the polarised attitudes represented in the media affected young people’s attitudes towards people with different cultural backgrounds. This study, therefore, examined young people’s global understanding in four European countries: Czechia, Finland, Germany and the Netherlands. The aim was to identify the level of world-mindedness of young people and compare the results with an earlier study (conducted in 2010) with the same research design. The research was targeted at a group of upper-secondary students in these countries. In total, 962 students participated in the study in 2017. Although the context in the observed countries varied, the findings revealed a stable state, or rather a slightly positive change of world-mindedness, to 2010 in all the countries. The results stress the need to remain sensitive to students’ opinions

and attitudes towards other people and cultures in geography lessons in general and especially when teaching and learning about current societal issues, inequality, exclusion and solidarity.

**Keywords:** World-mindedness; global-mindedness; young people; migration; Europe; geography education

5. Knecht, P., & Spurná, M. (2021, October 8). Does specialization in geography teaching determine teachers' conceptions of geography teaching? *International Research in Geographical and Environmental Education*, 31(3), 242–260. <https://doi.org/10.1080/10382046.2021.1970967>

**Abstract:** Many countries worldwide consider the demand for lowering the qualification level of teachers as a possible solution to the long-term lack of qualified teachers, aging teaching staff, and high teacher drop-out rate. In Czechia, geography is increasingly being taught by non-specialist teachers; therefore, we compared specialized and non-specialized geography teachers' teaching conceptions. Drawing on previous robust qualitative research, we developed a questionnaire measuring teachers' conceptions of geography teaching and surveyed Czech lower secondary in-service geography teachers ( $n = 530$ ). Path analysis revealed that specialized geography teachers report longer and stronger relationships between the conceptions that may represent a wider range of geographies available to students. Non-specialized teachers demonstrated only a narrow and limited epistemological awareness of the subject. Our research serves as evidence supporting the inevitability of teachers' specialization in the discipline.

**Keywords:** Geography education; teachers' conceptions; conception of geography

## JOURNAL OF CROSS-CULTURAL PSYCHOLOGY

1. Carmona, M., Guerra, R., & Hofhuis, J. (2022, March 26). What Does It Mean to be a “Citizen of the World”: A Prototype Approach. *Journal of Cross-Cultural Psychology*, 53(6), 547–569. <https://doi.org/10.1177/00220221221088332>

**Abstract:** The superordinate social category “*citizen of the world*” is used by laypeople and scholars to embody several constructs (e.g., cosmopolitanism; global identity and citizenship), and prior research suggests that the concept is better represented as a prototype rather than having a clear-cut definition. This research aims to systematically examine the prototypical meaning of this social category, and how it is cognitively processed. Relying on a prototype approach, six studies ( $n = 448$ ) showed that certain attributes of this category were communicated more frequently and were regarded as more central (e.g., multiculturalism), and that central (vs. peripheral) attributes were more quickly identified, more often remembered, and more appropriate to identify a group member, as well as the self, as a “*citizen of the world*.” These results systematically demonstrated that this category has a prototypical structure and there is a differentiated cognitive automatic processing for central and peripheral attributes. We propose that the specific content activated by the attributes regarded as central to the prototype of “citizens of the world” (e.g., intercultural contact; diversity), and the fact that these are more accessible in memory to form a mental representation, are important aspects to understand identity processes and their impact on intergroup outcomes.

**Keywords:** all-inclusion superordinate identities, prototype approach, cosmopolitanism, global citizenship, lay meaning

2. Gutiérrez-Carmona, A., & Urzúa, A. (2022, April 1). Ethnic Identity and Self-Esteem as Mediators of the Effects of Cultural Involvement on the Wellbeing of Indigenous Andean People. *Journal of Cross-Cultural Psychology*, 53(6), 570–582. <https://doi.org/10.1177/00220221221088337>

**Abstract:** Evaluate the relationship between the cultural involvement and the different dimensions of the Lickan-Antay well-being, as well as the possible mediating effect of ethnic identity and the self-esteem in this relationship. An observational design was used. Three hundred ninety-five Lickan-Antay adult men and women residing in Lickan-Antay development areas and in two cities and northern Chile participated. The variables well-being, Lickan-Antay cultural involvement, self-esteem, and ethnic identity were measured with validated ad hoc scales and with good fit indicators. Cultural involvement has a positive direct effect on dimensions of Lickan-Antay well-being, and total and specific indirect effects on all dimensions of Lickan-Antay well-being, through self-esteem and ethnic identity. Self-esteem and ethnic identity explain an important part of the relationship between cultural involvement and the different dimensions of Lickan-Antay well-being. The results were discussed in the light of previous theories on cultural involvement, ethnic identity, and self-esteem and their relationship with well-being in indigenous communities, recognizing the particularities of these last ones in the Andean Latin American context.

**Keywords:** Well-being, Cultural involvement, Ethnic identity, Self-esteem, Andean people

3. Ge, F., Park, J., & Pietromonaco, P. R. (2022, April 3). How You Talk About It Matters: Cultural Variation in Communication Directness in Romantic Relationships. *Journal of Cross-Cultural Psychology*, 53(6), 583–602. <https://doi.org/10.1177/00220221221088934>

**Abstract:** Communication plays an integral role in shaping romantic relationship quality. Yet, little is known about whether people from different cultural backgrounds communicate differently in their romantic relationships. Here, we addressed this issue by examining (a) whether the extent to which individuals communicate directly or indirectly in their romantic relationships varies by culture, (b) what mechanism underlies these cultural differences, and (c) how the fit between culture and communication style contributes to expected relationship satisfaction. Three key findings emerged across three studies (total  $N = 1,193$ ). First, Chinese preferred indirect (vs. direct) communication more than European Americans, and this effect was more strongly pronounced in positively (vs. negatively) valenced situations (Studies 1–3). Second, interdependent (vs. independent) self-construal mediated the cultural difference in indirect communication both in positive and negative situations (Study 3). Finally, both cultural groups anticipated greater relationship satisfaction when they imagined their partner using the culturally preferred mode of communication—that is, indirect communication for Chinese and direct communication for European Americans (Study 3). These findings advance theory on culture and romantic relationship processes by demonstrating cultural differences in preferred communication styles across different situational contexts, identifying self-construal differences underlying these preferred communication styles, and highlighting the importance of congruence between culture and communication style for the quality of relationships.

**Keywords:** Culture, Communication directness, Interdependence versus independence, Romantic relationship, Relationship quality

4. Wefers, H., Schwarz, C. L., Hernández Chacón, L., & Kärtner, J. (2022, May 12). Maternal Ethnotheories About Infants' Ideal States in Two Cultures. *Journal of Cross-Cultural Psychology*, 53(6), 603–625. <https://doi.org/10.1177/00220221221096785>

**Abstract:** Accumulating evidence suggests that ethnotheories about *ideal states* of infant affect and activity vary across cultures in important ways. However, most previous studies have not directly identified such ethnotheories but rather inferred them from observational studies on mother-infant interaction. To fill this research gap, we interviewed mothers from two cultural milieus—mothers from Münster (urban Germany) and mothers who identify themselves as Kichwas (rural Ecuador), as these contexts presumably offer different construals of the self—to determine their ideal states of infant affect and activity and their self-reported co-regulation tendencies. The interview was based on short video clips of a German and an Ecuadorian infant displaying different

combinations of affect (neutral, low-arousal positive or high-arousal positive affect) and activity (low or high). As expected, mothers in Münster preferred higher levels of positive affect than Kichwa mothers. Regarding co-regulation tendencies, we found cultural similarities and differences: Across samples, mothers tended to stimulate affect, and activity, especially when infants were neutral or inactive, but differed in their modality of co-regulation. More specifically, Münster mothers advocated more distal co-regulation modalities than did the Kichwa mothers. Taken together, the present study is the first to provide explicit evidence that maternal ethnotheories about infants' ideal affect vary across cultures. The cross-cultural differences in ideal affect were not accompanied by differences in self-reported co-regulation of affect, suggesting an indirect link between ideals and (self-reported) parenting behavior.

**Keywords:** Ethno theories, Ideal infant states, affect, activity, co-regulation, development niche

5. Zreik, G., Golden, D., & Oppenheim, D. (2022, May 11). Challenges of Mothering in Extended Families: The Case of Palestinian Women in Israel. *Journal of Cross-Cultural Psychology*, 53(6), 626–642. <https://doi.org/10.1177/00220221221098399>

**Abstract:** Historical and cross-cultural records show that childrearing is generally situated within a community of significant others, particularly kin. These others not only shape children's behavior, but also shape that of mothers. The purpose of this paper is to explore this phenomenon from the point of view of Palestinian mothers in Israel. This is an instructive case study because the Arab society in Israel is undergoing fundamental changes, many of which shape—and are shaped by—changes in women's lives, including shifts in perceptions and practices of mothering. Based on short, semi-structured interviews with 51 Palestinian mothers, the paper explores the challenges of mothering in the context of the extended family, with a focus on intergenerational relations. The interviews were analyzed using thematic analysis, supported by descriptive statistics. Findings revealed experiences of persistent “interference” in their mothering on the part of the older generation, exacerbated in circumstances of close residential proximity. These experiences did not lead to open conflict but rather served to bolster the women's resolve to carve out their own ways of mothering.

**Keywords:** Mothers, Mothering, extended families, Israel, Palestinian

6. Gillespie, S., Eales, L., Simpson, D. D., & Ferguson, G. M. (2022, June 1). Remote Acculturation and Physical Activity Among Adolescent-Mother Dyads in Jamaica: A Developmental Dyadic Moderation. *Journal of Cross-Cultural Psychology*, 53(6), 643–658. <https://doi.org/10.1177/00220221221101172>

**Abstract:** This study examined the associations between remote acculturation to European American culture of the United States (U.S.), and physical activity levels among Jamaican mother-adolescent dyads. Remote acculturation, a modern type of globalization-facilitated acculturation to a distant non-native culture, is a demonstrated risk factor for some health outcomes, but the association with physical activity has not

previously been examined. Mothers and adolescents ( $N = 660$ ; 330 dyads) were recruited from schools in Kingston, Jamaica. Actor-Partner Interdependence Moderation Models tested hypotheses about actor and partner effects of U.S. cultural orientation on moderate and vigorous physical activity (MVPA), and the moderation of these effects by developmental stage, socioeconomic status (SES), and gender. We observed a contrast pattern of moderation consistent with increased autonomy granting across adolescence, such that the signs (positive/negative) of the actor and partner effects depended on adolescent developmental stage. The actor effect of adolescents' U.S. orientation on their own MVPA was negative for early adolescents (unexpected) and positive for mid-adolescents (expected); by contrast, the partner effect of mother's U.S. orientation on adolescents' MVPA was positive for early adolescents (expected) and negative for mid-adolescents (unexpected). SES and gender did not moderate the associations. This study contributes to an emerging body of literature on the health correlates of remote acculturation. Our results suggest that whether remote cultural orientation is a risk or protective factor varies based on the health domain in question, developmental stage, the remote culture, and the context.

**Keywords:** Adolescence, Remote acculturation, Physical activity, Actor partner interdependence model, Jamaican/Caribbean

7. Jurkat, S., Iza Simba, N. B., Hernández Chacón, L., Itakura, S., & Kärtner, J. (2022, May 18). Cultural Similarities and Differences in Explaining Others' Behavior in 4- to 9-Year-Old Children From Three Cultural Contexts. *Journal of Cross-Cultural Psychology*, 53(6), 659–682. <https://doi.org/10.1177/00220221221098423>

**Abstract:** Previous studies suggest that people from the Western hemisphere tend to explain others' behavior based on a person's traits and dispositions, while participants from non-Western cultural settings more likely refer to situational factors. From a developmental perspective, it has been suggested that culture-specific modes of explaining behavior gradually emerge during late childhood and adolescence. The present study explored whether traces of a corresponding culture-specific development can be found at earlier ages when using simplified assessments. In total, 438 children between 4 and 9 years old from Münster (urban Germany), Kyoto (urban Japan), and Cotacachi (rural Ecuador), were asked to explain positive and deviant behaviors of children depicted in simple picture-based vignettes. While more internal attributions were given in Münster than in Kyoto and Cotacachi children at 4 to 5 years old, these cultural differences disappeared as internal attributions significantly increased with age in Kyoto and Cotacachi but not Münster children. Analyzing children's explanations on a level of subcategories revealed more subtle cultural specificities. For example, when giving internal explanations, Cotacachi children focused on stable traits, while Münster children emphasized individual desires and Kyoto children highlighted more volatile aspects. Cross-cultural differences in children's social explanations could partially be explained by mothers' preference for autonomy-related socialization goals. Taken together, this study provides evidence for an earlier onset of internal explanations when they are culturally accentuated and further calls for a more nuanced approach to capture culture-specific meaning systems reflected in everyday social explanations.

**Keywords:** Culture, Causal attribution, Social explanations, Child development

8. Allasad Alhuzail, N. (2022, May 18). The Meaning of the Marital Relationship in the Lives of Three Generations of Bedouin Women. *Journal of Cross-Cultural Psychology*, 53(6), 683–702. <https://doi.org/10.1177/00220221221099593>

**Abstract:** Since Israel’s establishment in 1948, its Bedouin population has undergone many changes—from a traditional society to a modern one and from a nomadic life to permanent settlement—that have greatly affected the marital relationship. This is a qualitative study, using a narrative paradigm, of perceptions of the marital relationship in three generations of women in 10 Bedouin families. An interpretive analysis of their life story interviews revealed differences and some similarities between one generation and the next. The first-generation women spoke in general about the woman’s role in the relationship and the man’s role, which was to defend, protect, and support the woman. In the two later generations, the women took upon themselves the overall responsibility for the marriage’s success. In the second generation, the marriage relied primarily on the behavior of the woman, whose role was to nurture the relationship and her husband’s reputation. The third generation saw the relationship as an escape from their suffocating birth family, a warm environment in which to rear children, and a way of meeting many emotional and physical needs. Although their expectations were often not realized, this generation, too, strove to preserve the relationship. None of the interviewees mentioned polygyny, although it is widespread among Israel’s Bedouins. And despite the intergenerational differences, there were some constants: “Women’s wisdom,” the key factor appearing in each generation, enabled Bedouin women to adapt to their marital lives and to preserve Bedouin culture.

**Keywords:** Acculturation, Bedouin population, Traditional Society, Marital Relationships.

## JOURNAL OF HUMANISTIC PSYCHOLOGY

1. Consoli, A. J., & Myers, L. J. (2021, October 1). Alternate Cultural Paradigms in Psychology: Long Overdue Recognition and Further Articulations. *Journal of Humanistic Psychology*, 62(4), 471–487. <https://doi.org/10.1177/00221678211048114>

**Abstract:** Many ethnic-acknowledging psychology researchers, practitioners, and their allies have expressed dissatisfaction with Eurowestern, mainstream psychology in the United States as it shows serious shortcomings when used to understand and serve minoritized communities. Eurowestern psychology has been criticized for its imperialistic, one-size-fits-all view of humanity. Accordingly, we challenge the neglect of the history and value of ethnic acknowledgment in psychology perpetrated and maintained by Eurowestern psychology, including mainstream psychology in the United States. We operationalize such challenge by articulating the construct of alternate cultural paradigms, by following it with a series of contributions authored by leading figures from each of the Ethnic Acknowledging Psychological Associations (EAPAs) in the United States, and by closing with a commentary by a renowned scholar in the field. The current article, followed by five separate and distinct articles from authors identified with each of the EAPAs (i.e., the Association of Black Psychologists [ABPsi], the National Latinx Psychological Association [NLPA], the Society of Indian Psychologists [SIP], the Asian American Psychological Association [AAPA], the Arab, Middle Eastern, and North African Psychological Association [AMENA-Psy]), together with a concluding commentary conforms the Special Issue on alternate cultural paradigms in psychology in the United States.

**Keywords:** alternate cultural, paradigm, ethnic-acknowledging psychological associations in the United States, Euro western psychology, mainstream psychology in the United States, hegemony

2. James Myers, L., Lodge, T., Speight, S. L., & Haggins, K. (2021, October 13). The Necessity of an Emic Paradigm in Psychology. *Journal of Humanistic Psychology*, 62(4), 488–515. <https://doi.org/10.1177/00221678211048568>

**Abstract:** This article provides an overview of developments in the field of Black/Africana/Pan African psychology over the past 50 years. It has evolved toward production of psychological knowledge grounded in an emic cultural paradigm consistent with the understandings emerging from classical African civilization and across the Diaspora. The historical context for the development of a Black/Africana cultural paradigm is discussed, including an analysis of the failure of Eurowestern psychology to effectively address the mental health needs of people of African ancestry, particularly as exemplified in the experience of Non-immigrant Africans in the Americas (NIAAs). Readers are introduced to the rise of African-centered cultural frames of reference, values, and psychological models, practices, and strategies. The development of Optimal Psychology or Optimal Conceptual Theory (OCT) is highlighted. OCT is a comprehensive theory successfully implemented, utilized, and researched for more than 40 years. The production of psychological knowledge built upon a cultural paradigm

rooted in the wisdom tradition of African deep thought traceable to the birthplace of all humankind is essential to a comprehensive understanding of humanity and will be described.

**Keywords:** Africana psychology, African-centered psychology, Black psychology, Pan African psychology, Liberation psychology, Optimal Conceptual Theory, belief systems analysis, Worldview, Cultural psychology

3. Consoli, A. J., López, I., & Whaling, K. M. (2021, October 15). Alternate Cultural Paradigms in Latinx Psychology: An Empirical, Collaborative Exploration. *Journal of Humanistic Psychology*, 62(4), 516–539. <https://doi.org/10.1177/00221678211051797>

**Abstract:** In an effort to systematize and organize an exploration of alternate cultural paradigms from a Latinx perspective, the membership of the National Latinx Psychological Association was surveyed via its electronic mailing list in successive rounds. The first invitation asked members to identify alternate cultural paradigms they use in their work or are familiar with; a definition of alternate cultural paradigms and some examples were provided. Responses were summarized and redistributed to the entire list, seeking further input. This process was followed a total of four times. The range of contributions extended from journal articles, to books, to authors, individuals, and movements. The compiled responses were then analyzed using qualitative methodology in the form of thematic analysis. The resulting taxonomy addresses the promotion of health and wellness in Latinx communities through the use of alternate cultural paradigms, and culturally adapted treatments and interventions. The former is made of examples and sources that emphasize combatting oppression and inequities as well as the use of cultural traditions, norms, and specific values. Though not identified as exemplary of alternate cultural paradigms, the latter refers to evidence-based or widely used treatments that have been modified (i.e., *adapted*) in an effort to improve service efficacy with Latinxs.

**Keywords:** Alternate cultural paradigms, Latinx psychology, National Latinx Psychological Association, Evidence-based treatments, community-defined evidence

4. Blume, A. W. (2021, October 9). Promoting New Psychological Understandings by Use of an Indigenous American Psychological Paradigm. *Journal of Humanistic Psychology*, 62(4), 540–562. <https://doi.org/10.1177/00221678211049875>

**Abstract:** Indigenous Americans are not well represented by mainstream psychology and its reductionistic tenets. As psychology developed, it could not help but to be implicitly biased by the surrounding hierarchical colonial culture—a culture in which Indigenous people and many others were conquered, oppressed, dehumanized, devalued, neglected, and excluded. An Indigenous worldview views humans as co-equal partners of an interdependent holistic system. Striving for healthy relationships with others is foundational to psychological health and well-being from an Indigenous perspective. Discrete entities (including self), independence, autonomy, and hierarchy are considered artificial mainstream conceptualizations that have negatively impacted the well-being of

humans and the natural world. Indigenous American psychology appreciates the sacred nature of the whole and its entities, approaching professional psychology with the humility and respect that interacting with sacred entities warrants. Essential tenets of an Indigenous American Psychological Paradigm (IAPP) are discussed therein as an alternative to existing mainstream beliefs. An IAPP offers the ability to address intergenerational psychological problems holistically across time in ways that mainstream psychology has been unable. Psychology is ultimately strengthened by an ability to conceptualize psychology through the new lenses of alternative paradigms such as this one.

**Keywords:** Colonialism, IAPP, Indigenous psychology, Psychological paradigm, Western, Psychology

5. Yoo, H. C., Gabriel, A. K., & Okazaki, S. (2021, December 23). Advancing Research Within Asian American Psychology Using Asian Critical Race Theory and an Asian Americanist Perspective. *Journal of Humanistic Psychology*, 62(4), 563–590. <https://doi.org/10.1177/00221678211062721>

**Abstract:** Research within Asian American psychology continually grows to include a range of topics that expand on the heterogeneity, hybridity, and multiplicity of the Asian American psychological experience. Still, research focused on distinct racialization and psychological processes of Asians in America is limited. To advance scientific knowledge on the study of race and racism in the lives of Asian Americans, we draw on Asian critical race theory and an Asian Americanist perspective that emphasizes the unique history of oppression, resilience, and resistance among Asian Americans. First, we discuss the rationale and significance of applying Asian critical race theory to Asian American psychology. Second, we review the racialized history of Asians in America, including the dissemination of essentialist stereotypes (e.g., perpetual foreigner, model minority, and sexual deviants) and the political formation of an Asian American racial identity beginning in the late 1960s. We emphasize that this history is inextricably linked to how race and racism is understood and studied today in Asian American psychology. Finally, we discuss the implications of Asian critical race theory and an Asian Americanist perspective to research within Asian American psychology and conclude with suggestions for future research to advance current theory and methodology.

**Keywords:** Asian American Psychology, Critical race theory, AsianCrt, Asian Americanist

6. Awad, G., Ikizler, A., Abdel Salam, L., Kia-Keating, M., Amini, B., & El-Ghoroury, N. (2021, December 4). Foundations for an Arab/MENA Psychology. *Journal of Humanistic Psychology*, 62(4), 591–613. <https://doi.org/10.1177/00221678211060974>

**Abstract:** Arab/Middle Eastern and North African (MENA) American psychology is a field rooted in ethnic studies and multicultural psychology. Although its study is relatively nascent in U.S. psychology, it has slowly been growing since the 1990s. The events of 9/11 resulted in an increase in psychological research on the Arab/MENA

population in the United States, providing empirical evidence to inform the historical and social foundations for an Arab/MENA psychology. This article seeks to identify key elements and factors present in an Arab/MENA psychology focusing on issues of identity and recognition, discrimination, cumulative racial-ethnic trauma, acculturation, and cultural values, such as hospitality and generosity, morality, family centricity, honor and shame, religiosity, and communication style.

**Keywords:** Arab, Middle Eastern and North African, MENA, Arab/MENA psychology, paradigm

7. Gone, J. P. (2021, October 11). Four Principles for Cultivating Alternate Cultural Paradigms in Psychology: Summary Reflections on Innovative Contributions. *Journal of Humanistic Psychology*, 62(4), 614–623. <https://doi.org/10.1177/00221678211050725>

**Abstract:** The contributors to this special issue have demonstrated the potency and promise of cultivating Alternate Cultural Paradigms (ACPs) in psychology that reflect and express the lived realities of non-White communities in America. Based on my past research engagement with several distinct American Indian and First Nations communities, I offer for consideration four principles for psychologists who seek to further cultivate ACPs: (a) attend independently to culture and power, (b) anchor conceptual abstractions in empirical examples, (c) complicate stock oppositions and essentialisms, and (d) integrate emancipation with application. Adoption of these four principles should assist with the development of robust ACPs that accurately reflect the lived experiences of non-White communities. The promotion of these in psychology represents the exciting possibility for a more just and equitable future in which the injuries of White racism are remedied and all Americans are granted equal opportunities to live and thrive in self-determined fashion.

**Keywords:** Cultural psychology, Antiracism, Ethno racial diversity, Emancipatory applications, American Indians

## JOURNAL OF PEACE EDUCATION

1. Lustick, H. (2022, January 2). Schoolwide critical restorative justice. *Journal of Peace Education*, 19(1), 1–24. <https://doi.org/10.1080/17400201.2021.2003763>

**Abstract:** How can restorative justice, an increasingly common alternative to zero tolerance discipline, serve as an opportunity to both close the racial discipline gap and promote more critical awareness of structural inequality? Using Knight and Wadhwa's (2014) concept of critical restorative justice, I analyzed interviews with youth leaders and staff at one urban charter high school who strove to implement schoolwide restorative justice practices with an explicit lens toward resisting structural oppression and the schools to prison pipeline. Despite evidence of this explicit commitment, participants still tended to favor exclusionary discipline, particularly to maintain order. It may benefit leaders to anticipate the countervailing pressures they will encounter as they try to enact restorative justice practices within districts and communities that are accustomed to punishment and order as markers of 'good' leadership. There also needs to be a greater emphasis on the words and deeds that contribute to 'critical restorative justice,' since restorative justice is so often discussed as a means for reducing the schools to prison pipeline without detailed attention to how it will disrupt traditional patterns of power and discipline in school.

**Keywords:** Restorative justice, Culturally responsive education, Urban education, School discipline, High school, Charter schools

2. Palma Flores, E., & Albornoz Muñoz, N. (2022, January 2). Between identification and empathy to elaborate the difficult past: an experience of a classroom debate with Chilean children. *Journal of Peace Education*, 19(1), 25–46. <https://doi.org/10.1080/17400201.2022.2039599>

**Abstract:** This article presents an analysis of historical thinking operations deployed in a student debate on Chile's difficult past. A discussion was held in a public school during the second semester of 2019 on sensitive issues in recent history. Twenty-seven students between eleven and fourteen years of age participated in the activity, corresponding to the sixth grade of primary education. The results indicate that the students are active thinkers of past events through operations such as identification and historical empathy. According to the debate, these operations unfold through the categories of family affiliation and social class from which they identify and empathise with the actors of the past and the temporal relationship with their own experience. The article concludes with some insights about peace education in post-conflict societies where the past conflict remains in the present.

**Keywords:** Identification, Historical empathy, Difficult past

3. Steele, A. R., & Leming, T. (2022, January 2). Exploring student teachers' development of intercultural understanding in teacher education practice. *Journal of Peace Education*, 19(1), 47–66. <https://doi.org/10.1080/17400201.2022.2030688>

**Abstract:** Teachers' intercultural understanding has a growing importance in teacher education. In a society with more diverse classrooms, there is an increasing need for teachers with a broad intercultural understanding. Student teachers who have had school practice in different cultural settings have a broader understanding of their multicultural pupils and are better equipped for related challenges and opportunities. This is paramount in classrooms including pupils of migrant and refugee backgrounds. In the field, there has been a growing understanding for this matter and there have been multiple studies of multicultural student teacher practice. However, further research is needed to understand the competence student teachers get from diverse school practice. Therefore, our focus is to explore to what extent student teachers can gain intercultural competence and professional development from practice in different cultural contexts.

**Keywords:** Intercultural understanding, Teacher professional development, Global understanding, Education/learning, Cultural diversity

4. Abbey, D., & Wansink, B. G. J. (2022, January 2). Brokers of multiperspectivity in history education in post-conflict societies. *Journal of Peace Education*, 19(1), 67–90. <https://doi.org/10.1080/17400201.2022.2051002>

**Abstract:** In post-conflict societies marked by strong negative stereotypes or delicate and sometimes unstable political contexts, teaching both knowledge and understanding of conflicting historical narratives has become a matter of educational urgency. Conversely, a framework for effective teacher training that prepares teachers to activate and facilitate the exchange of multiple perspectives has yet to be identified. This qualitative and exploratory research aims to answer the questions, what boundaries do expert teacher trainers believe that teachers in post-conflict societies encounter when brokering multiple perspectives in the classroom? Which teaching or training methods can teacher trainers use to help teachers reduce the impact of these boundaries? To advance the use of multiperspectivity in post-conflict history education and enhance history-teacher training design. Semi-structured interviews were conducted with twelve experts in history-teacher training to answer these questions. The expert's statements were openly and axially coded using Bronfenbrenner's (1979) Ecological Systems Theory as an analytical lens. Identifying ten personal or environmental boundaries to brokering multiperspectivity in the classroom, and two training approaches to help teachers establish continuity between their multiperspectivity training and day-to-day teaching practices. Further providing actionable recommendations for educators, non-governmental organizations, and educational scientists.

**Keywords:** History education, Multiperspectivity, Ecological systems theory, Teacher training, Post-conflict education, Reconciliation

5. Hà, T. A., Bellot, A. R., & Lê, T. P. T. (2022, January 2). High-school students' perception of the American War through literature: a case study from Hồ Chí Minh City, Vietnam. *Journal of Peace Education*, 19(1), 91–121. <https://doi.org/10.1080/17400201.2022.2051003>

**Abstract:** The present case study explores the reception of American War literature among Vietnamese high-school students. In April and May 2020, seventy-seven seventeen-year-old students from *Lê Hồng Phong High School for the Gifted* (Hồ Chí Minh City) participated in this study by answering Google form surveys about literary texts that form part of the Vietnamese national curriculum. The main findings show that 86% of the students deem it necessary to study literary works about the American War because of the historical and documentary value they provide. A vast majority of participants (95%) would be interested in reading literary texts written by American authors to learn about the war from a transnational perspective. This would require an alternative approach to the teaching of the American War in general, and its literary works in particular, with a revision of the national curriculum to include a wider variety of texts and authors.

**Keywords:** American War literature, Peace, High-school Vietnamese students Ho Chi Minh City, perception of the American War Vietnamese national curriculum

6. Maki, K. E., Kranzler, J. H., & Moody, M. E. (2022, June). Dual discrepancy/consistency pattern of strengths and weaknesses method of specific learning disability identification: Classification accuracy when combining clinical judgment with assessment data. *Journal of School Psychology*, 92, 33–48. <https://doi.org/10.1016/j.jsp.2022.02.003>

**Abstract:** The Dual Discrepancy/Consistency (DD/C) pattern of strengths and weaknesses (PSW) method is the most prominent “other alternative research-based procedure” used to identify a specific learning disability (SLD). The DD/C method is intended to be used with multiple data sources, but no research has examined identification decision making using the DD/C PSW analysis of cognitive and academic achievement test scores with other assessment data (e.g., pre-referral intervention data, parent/teacher reports, observations, evaluation of exclusionary factors). This study used an experimental vignette methodology to investigate school psychologists' ( $N = 343$ ) identification decision making using the DD/C method with multiple data sources. Results showed that school psychologist participants made highly accurate (97.50%) identification decisions when both cognitive and achievement test score patterns and other assessment data were clearly indicative of SLD, but that overall identification accuracy was only 65.60%. Participants made less accurate identification decisions when examining test score data that did not meet DD/C PSW criteria for SLD than when examining test score data that did. Participants made less accurate decisions when other assessment data (interpreted in conjunction with test scores) did not meet DD/C PSW criteria for SLD or were ambiguous than when they did. In addition, male school psychologists were less likely to make accurate identification decisions than female school psychologists, and participants who were Nationally Certified School Psychologists were less likely to make accurate identification decisions than those who

were not. Last, more experience with DD/C resulted in less accurate identification decisions, and participants who made accurate decisions reported higher levels of confidence, although the effect size was negligible. Implications for research and practice are discussed.

## JOURNAL OF THE LEARNING SCIENCES

1. Yannier, N., Crowley, K., Do, Y., Hudson, S. E., & Koedinger, K. R. (2022, February 28). Intelligent science exhibits: Transforming hands-on exhibits into mixed-reality learning experiences. *Journal of the Learning Sciences*, 31(3), 335–368. <https://doi.org/10.1080/10508406.2022.2032071>

**Abstract:** Background: Museum exhibits encourage exploration with physical materials typically with minimal signage or guidance. Ideally children get interactive support as they explore, but it is not always feasible to have knowledgeable staff regularly present. Technology-based interactive support can provide guidance to help learners achieve scientific understanding for how and why things work and engineering skills for designing and constructing useful artifacts and for solving important problems. We have developed an innovative AI-based technology, Intelligent Science Exhibits that provide interactive guidance to visitors of an inquiry-based science exhibit. Methods: We used this technology to investigate alternative views of appropriate levels of guidance in exhibits. We contrasted visitor engagement and learning from interaction with an Intelligent Science Exhibit to a matched conventional exhibit. Findings: We found evidence that the Intelligent Science Exhibit produces substantially better learning for both scientific and engineering outcomes, equivalent levels of self-reported enjoyment, and higher levels of engagement as measured by the length of time voluntarily spent at the exhibit. Contribution: These findings show potential for transforming hands-on museum exhibits with intelligent science exhibits and more generally indicate how providing children with feedback on their predictions and scientific explanations enhances their learning and engagement.

2. Calor, S. M., Dekker, R., van Drie, J. P., & Volman, M. L. L. (2022, January 27). Scaffolding small groups at the group level: Improving the scaffolding behavior of mathematics teachers during mathematical discussions. *Journal of the Learning Sciences*, 31(3), 369–407. <https://doi.org/10.1080/10508406.2021.2024834>

**Abstract:** Background: Supporting students during collaborative learning in mathematics is challenging for teachers. We developed the Small-Group Scaffolding Tool (SGS-Tool) to assist teachers regarding how and when to offer support. The tool is based on three characteristics of scaffolding small groups at the group level: contingency to the *group*, phasing out content support when the group can continue independently, and transferring responsibility for learning to the *group*. Method: We investigated whether the scaffolding behavior of teachers using the SGS-Tool was more adapted to the group level than that of teachers not using the tool. Participants were four teachers and their seventh grade classes. The topic was Early Algebra. We analyzed teachers' scaffolding behavior with one group during five lessons. Findings: The SGS-Tool offered teachers support when the groups discussed mathematics, but adaptations of the tool are needed. Overall, the SGS-Tool seems to be a promising tool for supporting mathematics teachers in scaffolding groups at the group level. Contribution: Our study provides insight into what scaffolding small groups at the group level entails and how teachers can apply it.

3. Cherbow, K., & McNeill, K. L. (2022, February 8). Planning for student-driven discussions: A revelatory case of curricular sensemaking for epistemic agency. *Journal of the Learning Sciences*, 31(3), 408–457. <https://doi.org/10.1080/10508406.2021.2024433>

**Abstract:** Background: Teachers need to make sense of curricular materials and design instruction to ensure students will be positioned to pursue their own arc of inquiry in curriculum enactment. Whole-group discussions are crucial opportunities for curricular sense making, yet planning and enactment can be challenging. Methods: We used a single, revelatory case study approach with one focal teacher to research curricular sense making for epistemic agency in storyline materials. We identified episodes of pedagogical reasoning for epistemic agency in the teacher’s pre- and post-interview responses and participation in discussion planning cycles (DPCs). This analysis revealed the recurrent sources of tension and ambiguity that the teacher grappled with concerning epistemic agency. Findings: The teacher made sense of two key sources of tension: curricular coherence and student coherence-seeking; equitable participation and incremental building of ideas; and one source of ambiguity: uniform or variable form(s) of epistemic agency in different discussion types. The teacher grappled with these tensions and ambiguity and learned to leverage them to position students with epistemic agency in their learning. Contribution The teacher engaged in *curricular sense making for epistemic agency*. This form of sense making involves the teacher’s efforts to engage with students’ emergent ideas and participation in their use of curricular materials.

4. Dishon, G. (2021, December 21). What kind of revolution? Thinking and rethinking educational technologies in the time of COVID-19. *Journal of the Learning Sciences*, 31(3), 458–476. <https://doi.org/10.1080/10508406.2021.2008395>

**Abstract:** Background: The transition to technology-mediated remote schooling during the COVID-19 pandemic represented a drastic shift in educational technologies’ function in K-12 settings. This theoretical paper sought to: (1) identify key developments in technology-use during the pandemic; (2) situate current events within the Learning Sciences’ evolving conceptualizations of educational technologies; and (3) outline how these developments should reframe our thinking about educational technologies. Methods: The paper is structured along three sets of relations, intended to support analyses that go beyond determinist or instrumental depictions of educational technologies: education-technology, human-technology, and human-education. Findings: I outline three key characteristics of educational technologies’ function during the pandemic: they were central to the grammar of schooling, their use was widespread across social contexts, and was need-driven rather than innovation-driven

## LANGUAGE LEARNING

1. Jiang, N., & Wu, X. (2022b, February 6). Orthographic Priming in Second-Language Visual Word Recognition. *Language Learning*, 72(3), 625–645. <https://doi.org/10.1111/lang.12488>

**Abstract:** Several previous studies showed that prime-target pairs with orthographical overlap but no semantic or morphological relationship (e.g., *freeze-free*) produced a masked priming effect in second language (L2) speakers but not in first language (L1) speakers. The present study further explored this intriguing L1–L2 difference by comparing English native speakers and nonnative speakers in the masked priming paradigm in combination with a lexical decision task. The stimuli included prime-target pairs with orthographical overlap at both the word-initial and word-final positions (e.g., *rubber-rub*, *stage-age*) but without any semantic or morphological relationship. The results replicated orthographic priming in L2 speakers for words with both overlap positions. Two accounts of this L1–L2 difference are discussed, one focusing on the representational aspect and the other on the processing characteristics of the L2 lexicon.

**Keywords:** orthographic priming; the position effect; masked priming; lexical decision; second language; L2 lexicon

2. Leeming, P., & Harris, J. (2022, March 23). Measuring Foreign Language Students' Self-Determination: A Rasch Validation Study. *Language Learning*, 72(3), 646–694. <https://doi.org/10.1111/lang.12496>

**Abstract:** Self-determination theory has been applied in various educational contexts. Language learning researchers have used factor analysis and structural equation modeling to investigate measures designed for this theory, but Rasch analysis has not been conducted. The Basic Psychological Needs Satisfaction and Frustration Scale (BPNSFS) and the Language Learning Orientation Scale (LLOS) were adapted for a Japanese tertiary educational context and administered to 600 students. Rasch analysis was applied to investigate the dimensionality of the measures and functioning of individual items. Regression analyses were used to examine the relationship between motivation and performance on an English reading and listening test. Results showed that the constructs were largely unidimensional, supporting use of these measures in future research, although problems with individual items suggest that revisions should be made. Regression analyses revealed that external forms of motivation had limited impact on performance, suggesting that teachers should attempt to enhance students' internalized forms of motivation.

**Keywords:** self-determination theory; motivation; Rasch analysis; validity; measurement

3. Wang, F. H., & Kaiser, E. (2022, March 3). Linguistic Priming and Learning Adjacent and Nonadjacent Dependencies in Serial Reaction Time Tasks. *Language Learning*, 72(3), 695–727. <https://doi.org/10.1111/lang.12491>

**Abstract:** Although syntactic priming has been well studied and is commonly assumed to involve implicit learning, the mechanisms behind this phenomenon are still under debate. Recent studies have suggested that exposure to nonlinguistic statistical patterns may influence language users' relative clause attachment biases, but whether the priming effect comes from implicit learning or explicit experimental task demands has remained unclear. In this study, we tested whether implicit learning of adjacent and nonadjacent sequences occurs in a nonlinguistic task (the serial reaction time task), and if so, whether these implicitly learned dependencies can cause syntactic priming in the linguistic domain. We found no priming effects even though dependencies in the serial reaction time task were successfully learned: learning of nonlinguistic dependencies did not prime relative clause attachment biases when dependency learning was strictly implicit in nature. This work provides novel evidence that implicit knowledge from a domain-general sequencing task alone does not necessarily induce syntactic priming.

**Keywords:** implicit learning; syntactic priming; relative clause attachment bias; non-adjacent dependencies; serial reaction time task

4. Dang, Lu, & Webb. (2022, September). Incidental Learning of Collocations in an Academic Lecture Through Different Input Modes. *Language Learning*, 72(3), 728–764. <https://doi.org/10.1111/lang.12499>

**Abstract:** In this quasi-experimental study, 165 learners of English for academic purposes at a university in China were randomly assigned to five experimental groups and a control group. Each experimental group encountered 19 target collocations in the same academic lecture in one of the following input modes: (a) reading, (b) listening, (c) reading while listening, (d) viewing, and (e) viewing with captions. The control group did not receive any treatment. The results revealed that reading, viewing, and viewing with captions led to learning at the form recognition level, but no significant differences were found in the learning gains across these modes. Nonverbal elaboration, type of vocabulary, and type of verbal elaboration affected learning, but frequency of occurrence, strength of association, comprehension, and prior knowledge of general vocabulary did not. This study provides further evidence supporting the use of academic lectures for incidental learning of collocations as well as expanding on the multimedia learning theory.

**Keywords:** incidental vocabulary learning; academic lecture; multimedia learning theory; viewing; collocation

5. Wang, A., & Pellicer-Sanchez, A. (2022, September). Incidental Vocabulary Learning From Bilingual Subtitled Viewing: An Eye-Tracking Study. *Language Learning*, 72(3), 765–805. <https://doi.org/10.1111/lang.12495>

**Abstract:** This study examined the effectiveness of bilingual subtitles relative to captions, subtitles, and no subtitles for incidental vocabulary learning. Learners' processing of novel words in the subtitles and its relationship to learning gains were also explored. While their eye movements were recorded, 112 intermediate to advanced

Chinese learners of English watched a documentary in one of 4 conditions: bilingual subtitles, captions, L1 subtitles, and no subtitles. Vocabulary pretests and posttests assessed the participants' knowledge of the target vocabulary for form recognition, meaning recall, and meaning recognition. Results suggested an advantage for bilingual subtitles over captions for meaning recognition and over L1 subtitles for meaning recall. Bilingual subtitles were less effective than captions for form recognition. Participants in the bilingual subtitles group spent more time reading the Chinese translations of the target items than the English target words. The amount of attention to the English target words (but not to the translations) predicted learning gains.

**Keywords:** incidental learning; vocabulary; eye tracking; viewing; bilingual subtitles

6. Isbell, D. R., & Lee, J. (2022, April 3). Self-Assessment of Comprehensibility and Accentedness in Second Language Korean. *Language Learning*, 72(3), 806–852. <https://doi.org/10.1111/lang.12497>

**Abstract:** This study investigated L2 Korean speakers' self-assessment of speech comprehensibility and accentedness, including a conceptual replication of Trofimovich, Isaacs, Kennedy, Saito, and Crowther (2016, Experiment 1) and exploratory analyses of individual differences in self-assessment. L2 Korean speakers ( $N = 198$ ) self-assessed their comprehensibility and accentedness using 9-point scales, rated their satisfaction with their pronunciation and the value (importance) of pronunciation on 9-point scales, completed a background questionnaire, and recorded a monologic speaking task. L1 Korean listeners ( $N = 82$ ) judged 28 randomly assigned speakers for comprehensibility and accentedness using 9-point scales, and scores for each speaker were adjusted to account for variation in listener severity. Listener and self-assessments for both comprehensibility and accentedness correlated moderately ( $r = .54$ ). Individuals with lower listener-based scores tended to overestimate their ability in self-assessment and vice versa, but higher listener-based scores were associated with smaller absolute miscalibration. Regression analyses suggested that pronunciation satisfaction and perceived value of pronunciation both influenced self-assessment scores and calibration.

**Keywords:** accentedness; comprehensibility; Dunning-Kruger effect; Korean; learner attitudes; self-assessment

7. Paquot, M., Rubin, R., & Vandeweerd, N. (2022, May 5). Crowdsourced Adaptive Comparative Judgment: A Community-Based Solution for Proficiency Rating. *Language Learning*, 72(3), 853–885. <https://doi.org/10.1111/lang.12498>

**Abstract:** The main objective of this Methods Showcase Article is to show how the technique of adaptive comparative judgment, coupled with a crowdsourcing approach, can offer practical solutions to reliability issues as well as to address the time and cost difficulties associated with a text-based approach to proficiency assessment in L2 research. We showcased this method by reporting on the methodological framework implemented in the Crowdsourcing Language Assessment Project and by presenting the results of a first study that demonstrated that a crowd is able to assess learner texts with

high reliability. We found no effect of language skills or language assessment experience on the assessment task, but judges who had received formal language assessment training seemed to differ in their decisions from judges who had not received such training. However, the scores generated by the crowdsourced task exhibited a strong positive correlation with the rubric-based scores provided with the learner corpus used.

**Keywords:** learner corpus; language assessment; proficiency; adaptive comparative judgment; crowdsourcing

## LINGUISTICS AND EDUCATION

1. Ag, A. (2022, June). School-positive practices outside the classroom. *Linguistics and Education*, 69, 101000. <https://doi.org/10.1016/j.linged.2021.101000>

**Abstract:** This article focuses on the uses of and interactions about popular culture and social media in order to examine school-positive practices and social identification. Through analysis of various kinds of interactional data, I argue that the focal participant of the study is not identified as the widely recognizable social type “nerd” despite her performance of practices associated with such a social position. I investigate practices taking place outside the classroom and show how a focus solely on students’ interactions inside a classroom will not always provide an adequate portrait of students’ affiliations with school and of their learning potential. The study also provides evidence that social media and popular cultural practices can facilitate school-positive practices and educational agendas and can therefore advantageously be embraced in school.

**Keywords:** School; Leisure time; Social media; Popular culture; Social identification; Normativity

2. Aalto, E., & Mustonen, S. (2022b, June). Designing knowledge construction in pre-service teachers’ collaborative planning talk. *Linguistics and Education*, 69, 101022. <https://doi.org/10.1016/j.linged.2022.101022>

**Abstract:** In this paper, we report on a qualitative study of student teachers’ collaboration in planning and implementing a course that integrated physics and the Finnish language. Audio-recorded planning sessions and interviews were examined using qualitative content analysis, first, to discover what kind of space for knowledge construction student teachers designed for learners and, second, to identify the characteristics of their collaboration in developing a new cross-disciplinary pedagogical practice. The analysis revealed challenges in integrating meaning-making resources for knowledge construction; especially the role of language remained mostly invisible. This indicates a need to develop teachable strategies of translanguaging. Student teachers’ varied forms of academic knowledge were interpreted as a resource for their collaboration across disciplines. Consequences for teacher education were acknowledged: supervision is needed to make the collaborative process visible and more profoundly conceptualized. More studies on the phases of the collaboration are needed.

**Keywords:** multimodal meaning-making resources; knowledge construction; translanguaging; collaboration; pre-service teachers; teacher education

3. MısıR, H., & Işık-Güler, H. (2022, June). “Be a better version of you!”: A corpus-driven critical discourse analysis of MOOC platforms’ marketing communication. *Linguistics and Education*, 69, 101021. <https://doi.org/10.1016/j.linged.2022.101021>

**Abstract:** This study examines the representation, reconstruction, and promotion of the ‘ideal subject’ of the job market in the promotional materials of the online/life-long

learning platforms known as Massive Open Online Courses (MOOCs). We take a corpus-driven critical discourse analysis to investigate the marketing language in the subscription e-mails and websites of six English-medium MOOC platforms. The analysis shows that the platforms use an array of promotional persuasion strategies, including advice-giving, autonomization and responsabilization of individuals and reinforce a self-betterment discourse to create marketable employees. Through the use of a distinct blend of higher education, marketing, and self-help discourses, the skills-oriented language explicitly references job insecurity and urges the individual to (re)build oneself tirelessly to remain demandable/marketable, neglecting an intellectual advancement angle. This ideology legitimizes the neoliberal demands for the enterprising-self and employability and feeds into one's fear of failure, ranking individuals in the society based on a value-adding/detracting practice.

**Keywords:** Massive Open Online Courses; Enterprising-self; Higher education discourse; job market discourse; Self-help discourse; Corpus-driven critical discourse analysis

4. Sobkowiak, P. (2022, June). Translanguaging practices in the EFL classroom - the Polish context. *Linguistics and Education*, 69, 101020. <https://doi.org/10.1016/j.linged.2022.101020>

**Abstract:** This paper reflects on classroom observations and focus group interviews with teachers to explore translanguaging by teachers and students in the Polish educational context. This qualitative research aimed at investigating teachers' attitudes toward intertwining the L1 and L2 and other semiotic resources in the English as a foreign language (EFL) classroom and attempted to determine to what extent translanguaging practices are implemented. To this end, the question was addressed whether teachers encouraged students to leverage their fluid, entire linguistic resources and other modalities to convey more information and get engaged in a range of tasks and activities. The collected data revealed that the teachers declared giving priority to the exclusive use of English in the classroom, but, in practice, expressed a pragmatic orientation toward the L1 deployment. Albeit the teachers reported to accept students' recourse to students' mother tongue, considering it a support and scaffold for more effective learning, shuttling between languages, in their own view, was not a daily classroom routine. In the same vein, the study participants did not position their students as emergent bilinguals, nor did they intentionally hardwire flexible bilingual pedagogy into their teaching. Both the L1 and L2, employed to a various extent depending on students' proficiency of English, were regarded as separate entities. The very few examples of translanguaging discussed in the paper were unmarked and produced mostly by students spontaneously.

**Keywords:** Translanguaging; Bilingual repertoires; Foreign language education

5. Qin, K., & Beauchemin, F. (2022b, June). “Everybody has to be with everybody”: Languageing relational and intellectual work with multilingual learners in a science class community. *Linguistics and Education*, 69, 101019. <https://doi.org/10.1016/j.linged.2022.101019>

**Abstract:** Research has long underscored the centrality of relationships in education. In this article, we explore how relations are constituted through moment-to-moment classroom talk in one U.S. multilingual science classroom. Drawing on the theory of languageing relations, we explore how the teacher and his students collaboratively languageed relationships during classroom interaction. Through discourse analyses of interactional and interview data, we illustrate that the teacher languageed a fun, caring relationship with and among students through creating opportunities for humor, translanguaging care and critical love, and valuing students’ epistemic rights. The emotional, relationally engaging classroom talk created ways of being together that sustained the students’ learning of science content. Instead of viewing relationships shaping classroom interaction, we argue for a theorization of relationships as constituted through languageing, and classroom intellectual work as intertwined with relational encounters. We conclude the article with discussion of the implications of this theorization for research and practice.

**Keywords:** Relational pedagogy; Language relations; Science classroom discourse study; Humor; Tranlanguaging care; Multilingual learners

6. Topal, P., & Aptoula, N. Y. (2022, June). Going beyond the post-observation’s interactional agenda: The observers’ references to their practices and pedagogical understandings. *Linguistics and Education*, 69, 101016. <https://doi.org/10.1016/j.linged.2022.101016>

**Abstract:** The recent proliferation of studies on the language of reflection unveiled post-observation conferences (POC) as an essential setting in teachers’ professional development. As the studies on these conferences have mainly focused on pre-service settings, research on in-service context where the peers are the providers of feedback remains limited. In an attempt to address this gap, this study micro-analyzes the video recordings of 14 in-service POC sessions at an English preparatory school with the theoretical and methodological tenets of conversation analysis. The findings reveal that reflective accounts are not limited to the observed, but generated by observers, too. Observing peers’ references to their past teaching events are found to function both as an interactional tool for the mitigation of critiques and as a tool for *doing reflection* in talk-in-interaction. The findings are conducive to the conversation analytic literature on language of reflection and expand the potential affordances of post-observation interactions.

**Keywords:** Post-observation conference; Feedback interaction; Teacher education; Conversation analysis; Professional development

7. Bozbıyık, M., & Can Daşkın, N. (2022, June). Peer involvement in dealing with teacher's insufficient response to student initiatives. *Linguistics and Education*, 69, 101013. <https://doi.org/10.1016/j.linged.2022.101013>

**Abstract:** In this study, we examine instances of peer involvement in L2 classroom interaction when student initiatives receive an observably insufficient teacher response. The data for this study consists of video-recordings of an EFL classroom in higher education. Using Conversation Analysis (CA), this study shows that peers get involved in and extend student-initiated sequences (1) to provide a response to student initiatives that receive the teacher's display of lack of knowledge and (2) to offer support in challenging a teacher response to student initiatives. In this way, peers contribute to resolving emergent knowledge-related troubles in teacher responses. Such peer involvement is found to create learning opportunities not only for the students but also for the teacher by changing the epistemic asymmetry and participation framework in the classroom. The analysis reflects the dynamics of classroom interaction and provides implications for our understanding of peer roles in whole-class interactions.

**Keywords:** Peer involvement; Student initiative; L2 classroom interaction; Conversation analysis

8. Roberts, T. (2022, June). Homework in a bi-national family: The mobilisation of others in resolving language-related epistemic issues. *Linguistics and Education*, 69, 101034. <https://doi.org/10.1016/j.linged.2022.101034>

**Abstract:** This study adopts a conversation analytic approach to present a close analysis of the sequential organisation of a parent-child homework activity in a Swedish-English bi-national family. Families formed within migration contexts are increasingly common in an ever-globalised world, but current research has not fully investigated how parent-child homework practices are affected by parents who possess differing levels of expertise in the societal language. This article examines a number of episodes where the progressivity of a homework activity is halted due to language-related epistemic issues. More specifically, these halts in progressivity are caused due to the homework tasks being written in Swedish in combination with the English mother's lack of language expertise in Swedish. The episodes exemplify how these epistemic deadlocks are resolved through the mobilisation of a more knowledgeable party, the Swedish father, who orients to translation as a trouble resolution tool which facilitates epistemic progression and the progressivity of the homework activity.

**Keywords:** bilingualism; conversation analysis; epistemics; homework; Sweden

9. Labrador, B. (2022, June). Word sketches of descriptive modifiers in children's short stories for teacher training in teaching English as a foreign language. *Linguistics and Education*, 69, 101036. <https://doi.org/10.1016/j.linged.2022.101036>

**Abstract:** Stories have proved to be an important didactic resource in language teaching; therefore, teacher trainees are often encouraged to design story-based tasks. However,

they may find difficulties in identifying the language typically found in children's stories. For this reason, the present paper aims at exploring a relevant feature of this genre, descriptive modifiers, in order to raise student teachers' genre awareness and prompt them to use high-frequency words and phrases. In this corpus-based study, a number of key elements were first identified, then classified, and finally, their occurrences were analyzed to obtain patterns in their grammatical behavior and an inventory of their most common collocates. *SketchEngine* was used both to compile the corpus and to retrieve word sketches of each modifier. Gaining more insight into the language of stories can contribute to helping teacher trainees to perceive characteristic language in children-oriented text types and to develop their own storytelling abilities.

**Keywords:** Word sketches; Descriptive modifiers; Children's stories; Corpus; Young English language learners; Genre

10. Mendes, M., & Martins, M. (2022, June). (Mis)Guided interpersonal deictic choices in primary school writing under language assessment. *Linguistics and Education*, 69, 101035. <https://doi.org/10.1016/j.linged.2022.101035>

**Abstract:** This paper aims to present a research on modal and temporal deictic choices in texts written by 4th graders under the 2008 National Assessment of Portuguese Language, conducted by the Ministry of Education of Portugal. These texts were produced as a response to a writing task under the title "If I were one... for a day", which guided students towards writing hypothetical narratives. In the specialized literature on language development of school-age children and adolescents, linguistic constructions of hypothetical referential meanings are described as an indicator of late writing development, achieved in the final years of schooling. This study is based on the systemic-functional linguistics principles on language as a socio-semiotic system for the realization of the socio-semiotic system of culture. Portuguese descriptive grammars are used to describe the verbal system of the Portuguese language. The corpus consists of 50 texts, on which information about verbal morphology and deictic choices were annotated. Results point to different patterns of deictic choices in the students' texts, ranging from texts entirely constructed with temporal deixis; texts entirely constructed with modal deixis; and texts with mixed patterns of both deictic choices. Such results suggest that writing hypothetical narratives does not seem to fit the meaning potential developed by 4th grade children. This may be explained not by the lack of lexicogrammatical resources, but by children's unfamiliarity with the kind of socio-semiotic activity requested in the task, which cannot be recoverable from social writing situations in primary school literacy contexts.

**Keywords:** Interpersonal deictic choices; Hypothetical meanings; Primary school writing; Writing assessment

11. Weston, D. (2022, June). Gatekeeping EpiSTEMic territories: Disciplinary requirements in Engineering and Natural Sciences undergraduate admissions interviews at the University of Cambridge. *Linguistics and Education*, 69, 101017. <https://doi.org/10.1016/j.linged.2022.101017>

**Abstract:** This article explores the gatekeeping practices involved in undergraduate admissions interviews comprising two “STEM” disciplines, Engineering and the Natural Sciences, at the University of Cambridge. It finds that the processes of inclusion and exclusion are not, unlike other gatekeeping encounters, determined primarily by rhetorical modes of self-presentation. They are instead determined by candidates’ ability to engage with and complete a series of problem sets that embed the discipline-specific epistemic and interactional requirements that comprise each discipline’s “epistemic territory” (Heritage 2013). How candidates accomplish this goal is explored in each of the relevant disciplines, and contrasted with the requirements of non-STEM admissions interviews.

**Keywords:** Gatekeeping; University of Cambridge undergraduate; admissions interviews; STEM disciplines; Epistemics; Interactional sociolinguistics

12. van Balen, J., Gosen, M. N., de Vries, S., & Koole, T. (2022, June). “What do you think?” How interaction unfolds following opinion-seeking questions and implications for encouraging subjectification in education. *Linguistics and Education*, 69, 101037. <https://doi.org/10.1016/j.linged.2022.101037>

**Abstract:** This study investigates how classroom interaction unfolds following an opinion-seeking question asked by teachers or students. By using conversation analysis as a research method, the authors found that to an opinion-seeking question the preferred response of a student is to express an opinion as if it originated from their own thoughts. These responses are often followed by a non-minimal follow-up by both teachers and peers. We illustrate that the non-minimal follow-ups are formulated in two different ways: generic or specific, whereby a specific non-minimal follow-up appears to offer the best opportunity for subjectification. Subjectification is about the existence of the student as subject of his own life. If a student provides a specific non-minimal follow-up, the student expresses himself as a subject, with his own thoughts and a unique voice, which appears to prompt a dialogue in which fellow participants are also invited to express themselves.

**Keywords:** Classroom interaction; Subjectification; Opinions; Follow-up; Conversation analysis

13. Heikkola, L. M., Alisaari, J., Vigren, H., & Commins, N. (2022, June). Linguistically responsive teaching: A requirement for Finnish primary school teachers. *Linguistics and Education*, 69, 101038. <https://doi.org/10.1016/j.linged.2022.101038>

**Abstract:** We investigated Finnish primary school teachers’ understandings of processes of language learning, their reported linguistically responsive practices, their reported professional learning needs, and the links between these. The teachers ( $n = 246$ ) responded to an online survey. Frequencies, possible links between the teachers’ background factors and their understandings and reported practices (one-way analysis of variance) and possible correlations between teachers’ understandings, reported practices

and personal learning needs were investigated. Respondents had a solid understanding regarding the investigated language learning processes and reported using additional semiotic scaffolding practices, such as visual cues, most often. Over half of the respondents reported needing more information about their students' backgrounds, experiences, and skills. The teachers with the highest levels of understanding reported using linguistically responsive practices the most and also sought the most professional learning. However, most Finnish primary school teachers would benefit from both theoretical and practical training in linguistically responsive pedagogy.

**Keywords:** Primary school teachers; Linguistically responsive teaching; Language learning; Teaching practices; Professional learning

14. Hugo, E., & Meneses, A. (2022, June). Written metalinguistic reflections of 4th graders on scientific explanations: A bridge between conceptual, discursive, and lexicogrammatical dimensions. *Linguistics and Education*, 69, 101047. <https://doi.org/10.1016/j.linged.2022.101047>

**Abstract:** Writing disciplinary texts is difficult for upper-elementary students, but it is a core practice for subject learning. A dimension under-explored in disciplinary writing contexts is metalinguistic reflection; however, this could help students attend to the different dimensions of writing, building bridges between them. This study characterizes the metalinguistic reflections of 96 monolingual Spanish-speaking 4th graders on the school scientific explanations genre throughout a pedagogical intervention. It also explores relations between metalinguistic reflections and scientific explanations written by two students. The results showed that the students' reflections changed throughout the learning sequence, since at the beginning, they mainly focused on conceptual aspects, while at the end, they also incorporated discursive notions. The case analysis highlights relations between reflections that integrate multidimensional writing dimensions and high scientific explanation performance. More research is required to understand the relations between the different dimensions of metalinguistic reflection —conceptual, discursive, and lexicogrammatical— and the quality of written texts.

**Keywords:** Metalinguistic reflection; Scientific explanations; Disciplinary writing

15. Lim, F. V., Toh, W., & Nguyen, T. T. H. (2022, June). Multimodality in the English language classroom: A systematic review of literature. *Linguistics and Education*, 69, 101048. <https://doi.org/10.1016/j.linged.2022.101048>

**Abstract:** A number of systematic reviews on multimodal pedagogies in English language classrooms were conducted from the 1990s to early 2010s. However, there is no recent review examining the thematic issues related to multimodal pedagogies in the English language classroom. This systematic review addresses this gap by examining research articles published from 2010 to 2021 on multimodal pedagogies in the primary and secondary English language classrooms. A qualitative thematic analysis of 98 articles gathered from the search uncovered five common themes including engagement with multimodal texts from students' lifeworld, the use of critical, creative and culturally

responsive multimodal pedagogies, explicit teaching of multimodal literacy, affect in multimodal learning, and concerns over multimodal assessment. The article discusses these themes in relation to the thematic findings of existing review studies with the same focus of multimodality in the English language classroom, and proposes directions for future research.

**Keywords:** Multimodality; Multimodal literacy; Systematic review; Qualitative thematic analysis; English language classroom

16. Aragón, M. J. (2022, June). “I think they’re Hispanic”: Agency and meaning-making in Latinx students’ discussions about text. *Linguistics and Education*, 69, 101045. <https://doi.org/10.1016/j.linged.2022.101045>

**Abstract:** This article presents an interactional analysis of peer discussions among Latinx bilinguals during “close reading” activities. The analysis draws from a larger ethnographic study which documented language and literacy practices in a sixth-grade classroom. Findings suggest that students were strategic and intentional in employing a variety of meaning-making practices, which allowed them to interpret and reframe the narrative presented in an academic text to make it relevant to their lived experiences inside and outside the classroom. Students’ linguistic practices challenge how close textual analysis is conceptualized in the Common Core State Standards and have implications for how bilinguals’ analytical skills and unique perspectives can be leveraged to support their critical engagement with texts.

**Keywords:** Bilingualism; Emergent bilinguals; Literacy; Close reading; Discourse analysis

17. Anson, D. W. (2022b, June). Personas of plagiarism: The construction of the ‘plagiarist’ in Australian university subreddits. *Linguistics and Education*, 69, 101050. <https://doi.org/10.1016/j.linged.2022.101050>

**Abstract:** Plagiarism is a central concern of universities, students, and researchers. Despite this, investigations into student perspectives of plagiarism remain relatively rare in the literature. This paper draws on Systemic Functional Linguistics to analyze the language used to describe “the plagiarist” in Australian university subreddit discussions. The findings reveal that the plagiarist is consistently construed as a criminal, and that this categorization could be further analyzed into specific sub-types, or personas. Implications for pedagogy include the need to carefully consider responses to plagiarism against the different personas. Implications for theory and research include the potential for dialogue between Linguistics, Education, and Criminology in order to further explore the connection between the plagiarist and the criminal.

18. Pulles, M., Berenst, J., de Glopper, K., & Koole, T. (2022, June). Children's discussions about texts: Integrating and evaluating practices. *Linguistics and Education*, 69, 101051. <https://doi.org/10.1016/j.linged.2022.101051>

**Abstract:** This paper examines how primary school students discuss deeper comprehension and evaluation of text, while involved in dialogic reading in the context of inquiry learning. It takes a conversation analytic perspective on reading for understanding and critical reading. Analysis of the conversational details of peer talk, revealed how students collaboratively construct deeper meaning of text and take a more critical stance toward the text by means of integrating and evaluating actions. We found that how students understand and interpret the text, is reflected in different types of integrating practices they use: comparing text components with previous knowledge, giving additional information, applying information from the text to the present interactional situation. Evaluating practices, on the other hand, are also based on integrating actions, but they display an explicit critical stance to the text as well

**Keywords:** Dialogic reading; Peer interaction; Primary education; Reading comprehension; Critical reading; Conversation analysis

19. Bisai, S., & Singh, S. (2022b, June). Language visibility in multilingual schools: An empirical study of schoolscapes from India. *Linguistics and Education*, 69, 101046. <https://doi.org/10.1016/j.linged.2022.101046>

**Abstract:** Studies of schoolscapes explore the material environment of schools where both images and text intermingle with each other to produce and transform language ideologies (Brown, 2012). This paper discusses various issues and complexities of material culture i.e., visual images, symbols, and material artifacts present in schools, which Brown (2012) describes as "schoolscapes". It uses schoolscape to explore the status of minority languages in multilingual schools and the teachers' attitudes towards those languages. The data were collected from eleven primary schools in Jhargram and Paschim Medinipur districts of West Bengal, India, by using the diversity sampling or heterogeneity sampling method. The study shows the dominance of majority languages over minority languages in the schoolscape. The study also solicits teachers' and students' attitudes towards minority languages. Both teachers and students demonstrate negative attitudes towards minority languages.

**Keywords:** Schoolscape; Multilingualism; Minority language; Teacher's attitude

20. Van Braak, M., & Huiskes, M. (2022, June). 'Doing being an expert': A conversation analysis of expertise enactments in experience discussions in medical education. *Linguistics and Education*, 69, 101052. <https://doi.org/10.1016/j.linged.2022.101052>

**Abstract:** Traditionally, medical experts are key actors in the socialization of future doctors. In this paper, we focus on how medical teachers and residents enact for the teachers the institutionally provided identity of 'expert', and how that enactment contributes to the socialization of medical professionals. Using Conversation Analysis,

we analyze a collection of instances where teachers ‘do being an expert’ in group discussions about experiences from practice in the context of Dutch postgraduate training of General Practitioners. We show how enactment of expertise is an interactional accomplishment. Participants enact expertise in two sequential contexts, which are consequential for the interactional function of the displays of expertise and contribute to socialization in various ways. Theoretically, this detailed description of contributes to our understanding expertise in educational context. The practical suggestions derived from the analyses can contribute to training of future medical professionals in a variety of educational contexts.

**Keywords:** ‘Doing being an expert’; Expert identity; Professional socialization; Medical education; Conversation analysis

21. Turnbull, J., Yazan, B., Akayoglu, S., Uzum, B., & Mary, L. (2022, June). Teacher candidates’ ideological tensions and covert metaphors about Syrian refugees in Turkey: Critical discourse analysis of telecollaboration. *Linguistics and Education*, 69, 101053. <https://doi.org/10.1016/j.linged.2022.101053>

**Abstract:** This study draws data from an asynchronous discussion to which teacher candidates (TCs) from France, Turkey, and USA contributed as part of their participation in a semester-long telecollaboration in 2017. The analysis focused on the contributions of TCs ( $n=34$ ) from Turkey and explored how they represented Syrian refugees in their responses to a question about refugees and immigration in their country. Using critical discourse analysis, the study examined metaphorical expressions in participants’ representation of Syrian refugees in Turkey. Findings present six metaphorical constellations about Turkey’s acceptance of refugees fleeing the Syrian war and these metaphors involve three ideological tensions that were dominant in TCs’ discourse: (a) similarity and togetherness/difference and separation, (b) gift/scarcity, (c) openness and bridging/spreading and disruption. The paper discusses these tensions in relation to the earlier research on the use of metaphors in discourses about immigrants and provides implications for educating teachers to work with refugee children.

**Keywords:** Teacher candidates; Telecollaboration; Metaphors; Ideological tensions; Syrian refugees; Turkey

22. Yamada, K. (2022, June). Undergraduate thesis supervisory conference: Academic discourse socialisation multiple-case study. *Linguistics and Education*, 69, 101054. <https://doi.org/10.1016/j.linged.2022.101054>

**Abstract:** It is widely understood that research experience is important for university graduates. Japanese undergraduates in Arts/Humanities are commonly required to conduct research and write a thesis. Adopting academic language socialization (Duff, 2010) as a theoretical and analytical approach and the triangulation of multiple data sources, this multiple-case study examines the processes of two Japanese undergraduate students’ socialization into the thesis genre with focus on face-to-face supervisory conferences and oral feedback. Findings revealed that the supervisors mostly dominated

the conferences and frequently gave disapproval feedback and reinforcement. However, they employed some mitigation strategies to soften the critical nature of their feedback. The students favourably and constructively accepted their supervisors' feedback. The student who established a closer relationship with his supervisor, had more academic and social interactions with both his supervisor and peers and received more academic and affective support appeared to be socialized into the undergraduate thesis writing more comfortably.

**Keywords:** Academic discourse socialization; Undergraduate thesis; Supervisory conference; Oral feedback; Mitigation strategies

23. Gu, M. M., & Huang, C. F. (2022, June). Transforming habitus and recalibrating capital: University students' experiences in online learning and communication during the COVID-19 pandemic. *Linguistics and Education*, 69, 101057. <https://doi.org/10.1016/j.linged.2022.101057>

**Abstract:** The COVID-19 pandemic has brought various challenges to the education domain globally. This study examines how a group of non-local university students studying at EMI universities in Hong Kong adjusted to the dominant online mode of learning and communication based on their lived experiences in learning and intercultural social networking during the pandemic. Employing the theory of digital literacies and Bourdieu's concepts of habitus and capital, we show how students expanded, redeveloped and transferred existing awareness, knowledge, competences and practices to engage in a range of digitally mediated academic and social activities in this condition. We conclude by discussing how the findings may inform refinement or readjustment of digitalized/zing international higher education.

**Keywords:** Online learning; Digital communication; Habitus; Capital; Higher education

24. Zhang, L., Zhang, Y., & Cao, R. (2022, June). "Can we stop cleaning the house and make some food, Mum?": A critical investigation of gender representation in China's English textbooks. *Linguistics and Education*, 69, 101058. <https://doi.org/10.1016/j.linged.2022.101058>

**Abstract:** This study offers a critical investigation of gender representation in China's English textbooks to examine potential gender bias. We analyzed a series of middle school English textbooks in Jiangsu Province to examine the feminine-masculine pronouns ratio, occupational/social roles and activities associated with people of different gender. Approximately balanced occurrences of feminine and masculine pronouns were identified in the corpus, suggesting rising gender-fair awareness. We further scrutinized the gender roles and activities by coding all female and male characters' occupational/social roles and identifying associated activities thematically. We observed that gender disparity is still pervasive as females were frequently assigned with familial relationships and engaged in less physically-demanding activities, whereas males were portrayed in wider social roles and frequently depicted in sport-related activities. Thus,

we suggest a critical approach both in identifying and subverting gender stereotypes in textbook design.

**Keywords:** China; English textbooks; Equality; Gender; Stereotypes

25. Nasi, N. (2022, June). Classroom norms as resources: Deontic rule formulations and children's local enactment of authority in the peer group. *Linguistics and Education*, 69, 101059. <https://doi.org/10.1016/j.linged.2022.101059>

**Abstract:** The paper explores children's peer co-construction and negotiation of classroom norms, focusing on rule formulations as a resource to assume an authoritative position in the group hierarchy. Drawing from a larger ethnographic research documented with video recordings in two primary schools in northern Italy, this study adopts a CA-informed approach to analyze children's situated deployment of rules (here, rules regarding academic tasks) after peers' behavior that is deemed inappropriate. As the analysis illustrates, children formulate ethical and procedural rules with the deontic modality (*must*, i.e. the Italian *dovere*) in order to a) sanction peers' previous conduct and/or b) account for a previous action that has been problematized. In the discussion it is argued that such practices are relevant to children's socialization to expected ways of behaving in the classroom and to the local negotiation of authoritative positions and valued identities within the peer group.

**Keywords:** Peer Socialization, Rule formulations; Authority; Deontics; Classroom interaction; Conversation analysis

## PHYSICS EDUCATION

1. Oss, S. (2022, April 11). Making jets of air visible in the infrared. *Physics Education*, 57(4), 043001. <https://doi.org/10.1088/1361-6552/ac59cf>

**Abstract:** An easy experiment is suggested to visualize the shape of a jet of hot air, coming from a hair dryer, which encounters obstacles along its path. Quite simply, owing to the heating produced on a flat surface, it is possible to acquire infrared thermal images of the jet. As a particular example, we observe the entrainment of air which is the basis of the Coanda effect.

**Keywords:** fluid dynamics, Coanda effect, infrared thermography, undergraduate lab

2. Cross, R. (2022, April 11). ‘Levitation’ of a falling pencil. *Physics Education*, 57(4), 043002. <https://doi.org/10.1088/1361-6552/ac5640>

**Abstract:** If a pencil is held upright on a smooth horizontal surface and allowed to fall, then the bottom end first slides backward and then forward across the surface. If the top end of the pencil is given a firm horizontal push then the bottom end lifts off the surface and the whole pencil becomes airborne.

**Keywords:** normal reaction force, centripetal acceleration, faster than g

3. Barretto, J. T. (2022, April 11). Bright lights are loud; violet shrieks and red hums. *Physics Education*, 57(4), 043003. <https://doi.org/10.1088/1361-6552/ac563d>

**Abstract:** An analogy to help address the abstract, non-intuitive nature of discrete energy levels and frequencies associated with allowed transitions is presented. The analogy uses notes on a stave as the base and attributes of the target such as intensity and frequency are discussed. Several limitations and implications for use are enumerated.

**Keywords:** analogies, teaching strategies, teaching

4. Binder, P. M., Lyons, K. M., & Herman, I. K. (2022, May 11). Archimedes, the puck, and the turntable. *Physics Education*, 57(4), 043004. <https://doi.org/10.1088/1361-6552/ac68c2>

**Abstract:** A standard problem in mechanics asks us to look at a frictionless puck sliding over and across a turntable (a rotating platform with constant angular velocity) from the rotating reference frame  $S'$  of the turntable. Here we analyse in some detail the kinematics and dynamics of such a puck, where a type of spiral discovered by Archimedes plays a central role.

5. Cross, R. (2022b, May 11). Motion of a plucked string or spring. *Physics Education*, 57(4), 043005. <https://doi.org/10.1088/1361-6552/ac664f>

**Abstract:** The initial motion of stretched spring, plucked in the middle, was captured with a high speed video camera. The motion is surprising, but the behaviour is similar to that when a guitar string is plucked or when a slinky is held vertically and the top end is released.

6. Jones, J. C. (2022, June 7). A numerical exercise on waste incineration. *Physics Education*, 57(4), 043006. <https://doi.org/10.1088/1361-6552/ac59cd>

**Abstract:** A numerical example for tutorial and possibly design exercise use is described which is concerned with the performance of household waste as a fuel in power generation.

**Keywords:** electricity; waste-to-energy; calorific value

7. Bastos, R. O., Cordeiro Filho, L. A., & Akio Ikeoka, R. (2022, April 12). Newton's law of cooling with a low-cost thermoscope: physics in the time of covid-19. *Physics Education*, 57(4), 045001. <https://doi.org/10.1088/1361-6552/ac5c6>

**Abstract:** The necessity to teach experimental physics in the pandemic period motivated the development of practices in which students may take measurements with instruments constructed by themselves. In this article, we present an experimental practice to approach Newton's law of cooling with a thermoscope (the earliest device for detecting changes in temperature, forerunner of the thermometer) constructed with household materials. Although the use of a non-calibrated thermoscope, the instrument presented several advantages, visual appeal, ease of handling, ease of data acquisition and good reproducibility. The students can take data, plot graphs, and verify if the Newton's law of cooling holds on the tested circumstances.

**Keywords:** Newton's law of cooling, thermoscope, low-cost experiment

8. Leonardi, A. M., Mobilio, S., & Fazio, C. (2022, April 12). A teaching proposal for the didactics of Special Relativity: the spacetime globe. *Physics Education*, 57(4), 045002. <https://doi.org/10.1088/1361-6552/ac5b82>

**Abstract:** Special Relativity introduces students to Modern Physics, whose importance in the high school is increasing. Nevertheless its teaching and learning is a critical issue. Different solutions have been developed to overcome the encountered difficulties. In this paper we describe the *spacetime globe*, a mechanical instrument that allows to experience Special Relativity hands-on. We show how it is possible to treat all the main phenomena foreseen by Special Relativity with simple laboratory experiences, using the idea of Minkowski's spacetime diagrams. The aim is to develop the use of geometrical approach in learning Special Relativity in high schools.

**Keywords:** Special Relativity, Einsteinian physics education, Einstein, Minkowski's diagrams, spacetime, secondary education

9. Zvorykin, I. Y., Katkova, M. R., & Maslennikova, Y. V. (2022, April 12). Magnetic levitator fitted with the Hall sensor readings. *Physics Education*, 57(4), 045003. <https://doi.org/10.1088/1361-6552/ac5b81>

**Abstract:** In this article, we propose a simple and accessible model of a magnetic levitator fitted with a Hall sensor. This model also allows to determine the magnitude of the magnetic field within the levitator working volume. Students can also compare the experimental magnetic field values to reference values in magnetism textbooks. This Arduino-based levitator may be built by a student under teacher's supervision as part of an individual project in high school or secondary school setting.

**Keywords:** levitator, Arduino, a modulus of the magnetic field vector

10. Benz, G., Buhlinger, C., & Ludwig, T. (2022, April 12). 'Big data' in physics education: discovering the stick-slip effect through a high sample rate. *Physics Education*, 57(4), 045004. <https://doi.org/10.1088/1361-6552/ac59cb>

**Abstract:** With the availability of educational digital data acquisition systems, it has also become possible in physics education to generate 'big' data sets by (a) measuring multiple variables simultaneously, (b) increasing the sample rate, (c) extending the measurement duration, or (d) choosing a combination among these three options. In the context of this paper, we will use a simple acceleration experiment to show that a higher sample rate, resulting in a larger data set, quantitatively reveals the stick-slip effect. For this purpose, two variables are measured simultaneously, first with a low and then with a high sample rate. The purpose of this paper is to illustrate that dealing with 'big' data sets can add value to experimentation in physics labs by dealing with data sets that more accurately describe observations.

**Keywords:** argumentation from data, data acquisition, sample rate, stick-slip effect

11. Zhu, E. Y. (2022, April 12). A mnemonic device determining the vector direction in cross product transformations. *Physics Education*, 57(4), 045005. <https://doi.org/10.1088/1361-6552/ac5869>

**Abstract:** Vector cross product transformations are essential components in general physics. The numerous mnemonic devices catered towards each potential transformation result in confusion, defeating their purpose of reducing learning barriers. Therefore, a general mnemonic device, subject–environment interaction or the subject, is proposed to help students in determining the resulting vector direction of various vector cross products.

**Keywords:** vector, cross-product, rotation, electromagnetism

12. Riccardi, P., Romano, V., & Pellegrino, F. (2022, April 12). Interactions among school teachers, students and university researchers in workplace experiences using disused instruments of school laboratories. *Physics Education*, 57(4), 045006. <https://doi.org/10.1088/1361-6552/ac5868>

**Abstract:** This work documents the collaboration between the Physics department of the University of Calabria and some schools of the region in a project devoted to recovering disused instrumentation in school laboratories. The project has been conceived as a workplace experience for the students, i.e. a learning experience in a real work place. In Italy, workplace experiences are mandatory for all students in the last 3 years (16–19 years old) of secondary education. The integration of these informal activities into the formal school context can allow structural and sustained connections between schools and research environments. In the following we describe how this integration has been implemented through a peer-to-peer interaction among school students, teachers and university researchers. The project, which entailed also the participation of the students in exhibits and public events, emphasizes the experimental activities in the physics laboratory as an important moment of aggregation and socialization.

**Keywords:** physics education; informal education; work-based learning; public engagement with science; outreach

13. Proven-Adzri, E., Ansah-Narh, T., Aworka, R., Fosuhene, S. K., Sottie, S. O., & Gyasi, G. (2022, April 12). Mercury transit observed in Ghana. *Physics Education*, 57(4), 045007. <https://doi.org/10.1088/1361-6552/ac5728>

**Abstract:** The planet Mercury transited the face of the Sun in a rare spectacle on 11 November 2019. It was an awe-inspiring moment for 300 students from Kwabenya Community High School and Ghana Atomic Energy Commission Basic School in Ghana to see this wonder of the cosmos. Celestron Power Seeker 60 mm diameter telescopes were used to project the Sun's image on a white card on the ground to observe safely. It was a time for the kids to relate the theory of eclipse and transits to a practical life experience. This was an avenue to introduce astronomy to the kids.

**Keywords:** physics education; informal education; work-based learning; public engagement with science, outreach

14. Pinochet, J. (2022). The little robot, black holes, and spaghettification. *Physics Education*, 57(4), 045008. <https://doi.org/10.1088/1361-6552/ac5727>

**Abstract:** The tidal forces generated by a black hole can be so powerful that they cause unlimited stretching, known as spaghettification. A detailed analysis of this phenomenon requires the use of Einstein's theory of general relativity. The aim of this paper is to offer an up-to-date and accessible analysis of spaghettification, in which the complex mathematics of Einstein's theory are replaced with the simpler and more intuitive concepts of Newtonian gravity. The article can serve as educational material for undergraduate modern physics or astronomy courses.

**Keywords:** black holes, tidal forces, spaghettification, science-engineering undergraduate students

15. Mananghaya, M. R., & Yu, D. (2022). Study of underdamped oscillations of a spring-mass system via directly measured acceleration time series. *Physics Education*, 57(4), 045009. <https://doi.org/10.1088/1361-6552/ac5726>

**Abstract:** A low-cost simple one-dimensional spring-mass system was constructed to investigate damped oscillations. The suspended mass in the system can move freely inside a cylinder containing a fluid. It provides an in-depth experience for demonstrating various concepts under oscillations. It can be used to probe the magnitude of damping forces in liquids such as water by analysing the oscillation of an immersed mass. Such low-cost apparatus can provide a powerful platform for instructions and a rich pedagogic experience. The manuscript presents an excellent idea that can be used as a simple laboratory exercise to explain damping in undergraduate courses on vibration.

**Keywords:** spring, oscillator and oscillations, pedagogic experience

16. Cramer, C. (2022). Problem-solving a lesson from relativity in physics education. *Physics Education*, 57(4), 045010. <https://doi.org/10.1088/1361-6552/ac5641>

**Abstract:** The principle of relativity is of fundamental importance in practice when we are solving problems in physics since the axiom states that the result of any physical experiment is the same when performed with identical initial conditions relative to any inertial coordinate system. Hence, conceptual knowledge of coordinate systems is central in any physics problem-solving framework. This opens up the question whether upper secondary school students should be taught to set up coordinate systems and apply basic coordinate transformations systematically when solving problems or if it should be left for physics courses at a college or university level? Given that working with coordinate systems does not require any advanced algebra or analysis knowledge, a case can be made for introducing the concepts of coordinate systems and transformations together with a uniform problem-solving framework. The purpose here, given that coordinate systems are central in problem-solving, is to revisit the method of drawing free body diagrams in engineering mechanics but adapted for upper secondary school physics. This method relies on the existence of a coordinate system and can be described by an activity diagram—a connected sequence of actions and decisions. The activity diagram is a map for problem-solving. The central actions in the activity are to introduce a coordinate system, draw a free body diagram and decide if the system should be transformed besides actually working out any algebra and numerical calculations. Here the notion of 'transformation' should be read as a graphical transformation rather than an algebraic group operation that is not suitable, neither to teach, nor to use at upper secondary level. A basic example is provided to illustrate why the methodology simplifies the problem-solving process and the student's understanding of the subject.

**Keywords:** problem solving methods, coordinate systems, coordinate transformation free body, activity diagram

17. Biswas, S., & Roy, D. (2022). Microcontroller based study of diode thermometers for online demonstration of undergraduate laboratory classes in COVID-19 lockdown. *Physics Education*, 57(4), 045011. <https://doi.org/10.1088/1361-6552/ac563f>

**Abstract:** The principle of relativity is of fundamental importance in practice when we are solving problems in physics since the axiom states that the result of any physical experiment is the same when performed with identical initial conditions relative to any inertial coordinate system. Hence, conceptual knowledge of coordinate systems is central in any physics problem-solving framework. This opens up the question whether upper secondary school students should be taught to set up coordinate systems and apply basic coordinate transformations systematically when solving problems or if it should be left for physics courses at a college or university level? Given that working with coordinate systems does not require any advanced algebra or analysis knowledge, a case can be made for introducing the concepts of coordinate systems and transformations together with a uniform problem-solving framework. The purpose here, given that coordinate systems are central in problem-solving, is to revisit the method of drawing free body diagrams in engineering mechanics but adapted for upper secondary school physics. This method relies on the existence of a coordinate system and can be described by an activity diagram—a connected sequence of actions and decisions. The activity diagram is a map for problem-solving. The central actions in the activity are to introduce a coordinate system, draw a free body diagram and decide if the system should be transformed besides actually working out any algebra and numerical calculations. Here the notion of 'transformation' should be read as a graphical transformation rather than an algebraic group operation that is not suitable, neither to teach, nor to use at upper secondary level. A basic example is provided to illustrate why the methodology simplifies the problem-solving process and the student's understanding of the subject.

**Keywords:** semiconductor band-gap thermometer,  $p$ - $n$  junction, forward bias, reverse saturation current, constant current source, temperature sensor

18. Spiecker, H., & Bitzenbauer, P. (2022). Phenomenological optics with self-made liquid lenses in the physics classroom. *Physics Education*, 57(4), 045012. <https://doi.org/10.1088/1361-6552/ac563e>

**Abstract:** Why does a raindrop on a window pane show an image of the environment that is turned upside-down? And why does vision go blurry underwater, but is perfectly clear with diving goggles? Our everyday life is rich in optical phenomena. Unfortunately, these phenomena often play a subordinate role in Optics teaching, compared to ray constructions or mechanistic light models. In our new teaching-learning sequence designed for introductory physics courses at secondary schools, the observation of the phenomena assumes a more prominent position and the observer's sense of sight becomes the starting point of learning about Optics. The centrepiece of our concept is the use of students' self-made Optics inventory including liquid lenses in various experiments.

**Keywords:** optics, phenomena, experiment, self-made, teaching-learning sequence

19. Tanaka, K. S., Harada, K., Hayamizu, T., Kita, R., Kono, R., Maruta, K., Nagahama, H., Ozawa, N., Sakemi, Y., & Sugimori, R. (2022). An accelerator experiment for junior and senior high school students to improve students' involvement in fundamental physics. *Physics Education*, 57(4), 045013. <https://doi.org/10.1088/1361-6552/ac510a>

**Abstract:** In Japan, research activities by junior and senior high school students show an upward trend. However, there are limited examples of research activities in the field of elementary particles and atoms. This is due to the difficulty associated with procuring research tools such as accelerators or particle detectors. Therefore, we hosted the 'Accel Kitchen' in 2018 and 2019 at the Cyclotron and Radioisotope Center (CYRIC) in Tohoku University where junior and senior high school students could participate in ongoing research of particle and atomic physics. At each workshop, 12 junior and senior high school students participated in the beam experiment, including the production of francium atoms (Fr) by the fusion reaction of oxygen and gold, optimizing the transport of the ion beam and identifying the alpha decay nuclei, and laser trapping of Fr for two days. Each group that was involved in the experiment was supported by researchers and university students who acted as mentors. This was the first opportunity for junior and senior high school students to know about the particle beam experiment in Japan.

**Keywords:** accelerator, atomic physics, outreach, francium

20. Lee, H., Chen, Y., Lee, J., Moon, S. J., & Kim, J. B. (2022). Simple motor variants. *Physics Education*, 57(4), 045014. <https://doi.org/10.1088/1361-6552/ac50a3>

**Abstract:** We have developed new rotors that can be classified into three groups by changing the rotors used in simple motors into various types. Group I has a semicircular shape rather than a perfect circle or square shape, group II has a structure consisting of several closed circles on one plane, and group III has a three-dimensional shape. We wanted to show students that a closed circular shape is not the only thing that can rotate in a magnetic field, and that various types of rotors are possible. Also, we think it would be good to give students an opportunity to envision different shapes of rotors.

**Keywords:** simple motor, electromagnetic force, inhomogeneous magnetic field, rotor

21. Trout, J. J., Jacobsen, T., Buondonno, G., & Weber, C. (2022). 'Astrophysics: history and theory', an undergraduate, interdisciplinary, asynchronous astrophysics course taught in the physics program. *Physics Education*, 57(4), 045015. <https://doi.org/10.1088/1361-6552/ac48c3>

**Abstract:** This project produced an online astronomy course based on the free, online OpenStax textbook. When this project was conceived, about a year before the Covid-19 pandemic, the authors had no idea that in a short period of time, most college and university classes would be online. This abrupt change in modalities of courses, from traditional, face-to-face lectures and laboratories to a more modern online format, sparked energetic discussions about the effectiveness of online courses. This paper describes the online astronomy course and its creation and evaluates the success of the

course at conveying the concepts and theories studied in astronomy courses. The success of this course is examined using a 100-question pre-test and post-test based on content knowledge. A survey was also completed of the students to evaluate the perceived success of the online course and the acceptance of online courses. The survey was adjusted to include opinions about the in-person labs that were cancelled due to the Covid-19 pandemic.

**Keywords:** introductory physics, interdisciplinary, astronomy, astrophysics

22. Oliveira, V. (2022). Limits of the simple pendulum formula for classroom use. *Physics Education*, 57(4), 045016. <https://doi.org/10.1088/1361-6552/ac5cda>

**Abstract:** We discuss the limits of the equation of the period of a simple pendulum,  $T_s = 2\pi\sqrt{l/g}$ , frequently used in high-school and university classrooms to measure the acceleration of gravity. We evaluate the relative error in determining the acceleration of gravity with this simple equation instead of a more realistic one, taking into account the string's mass, the bob's radius, and finite angular displacements. We show that the bob radius and finite angular displacements increase the period of oscillation of the pendulum and, hence, contribute to a positive deviation in the value of  $g$  calculated with the simple pendulum formula. On the other hand, the string's mass decreases the pendulum's period and induces a negative deviation in the value of  $g$ . As a result, it is possible to adapt the pendulum's characteristics to use the simple pendulum formula and calculate  $g$  with accuracy.

**Keywords:** simple pendulum, classroom pendulum, relative error

23. Neel, M. S. (2022). Demonstrating acoustic camouflage with ultrasonic sensors in the laboratory. *Physics Education*, 57(4), 045017. <https://doi.org/10.1088/1361-6552/ac5cd9>

**Abstract:** Similar to how stealth materials were developed to reduce the radar wave energy returning from an aircraft, here we explore a low-cost laboratory demonstration that uses similar principles to prevent detection of an object by an ultrasonic sensor. This demonstration setup can be used as a starting point to encourage students to explore the surface properties of materials and the ways in which ultrasonic ranging sensors operate.

**Keywords:** acoustic, ultrasonic, sensor, Arduino, camouflage, stealth

24. Moya, A. N., & Merino, A. (2022). Building a digital barometer with Arduino to study forces due to atmospheric pressure and weather maps at schools. *Physics Education*, 57(4), 045018. <https://doi.org/10.1088/1361-6552/ac5c6e>

**Abstract:** We describe a simple STEM project for students to learn to measure atmospheric pressure by using a sensor of the type BMP180 together with the Arduino electronic platform. The collected experimental data, together with simple experiments, can be used to study the different pressure units and the relationship between pressure and force. Also, they can be used to study basic meteorology concepts associated with the

movement of air on isobar maps, and to include transversal competences related to environmental education.

**Keywords:** Physics education, atmospheric pressure, Arduino, weather maps, barometer sensors

25. Persson, R. A. X. (2022). On the operation of the Hanstead car. *Physics Education*, 57(4), 045019. <https://doi.org/10.1088/1361-6552/ac5c6d>

**Abstract:** We consider the operation of the hypothetical mechanical vehicle driven by an engine powered by small rockets introduced by P D Hanstead in the inaugural volume of this journal. Hanstead arrived at three contradictory conclusions regarding the change in velocity should some of the rockets malfunction at a particular time. This thought experiment constitutes an excellent, conceptual discussion, or even exam, question for an introductory mechanics course.

**Keywords:** mechanics, paradox, thought experiment, discussion question

26. Goev, G., & Velinov, T. (2022). Precise measurements in mechanics using a moving light source and a smartphone. *Physics Education*, 57(4), 045020. <https://doi.org/10.1088/1361-6552/ac59ce>

**Abstract:** In this paper, we propose a simple yet generic and versatile method to measure the position of a moving body as a function of time. Apart from very basic equipment such as carts and wheels, only a laser pointer or a similar device and a smartphone are necessary. By attaching a source of light to a cart and video filming its movement on a horizontal plane under the gravitational force, the position of the cart as a function of time can be recorded without any calibration and using one of the many free apps. The obtained results for the cart acceleration under a constant force were in very good agreement with Newton's second law. The inexpensive equipment and the possibility of taking data at very short intervals allow different experiments in mechanics to be performed, for example to demonstrate the conservation of energy and momentum in mechanics or to investigate complex movements.

**Keywords:** Newton's law, Atwood machine, mechanic education

27. Koblischka, M. R., & Koblischka-Veneva, A. (2022). Measurement of the characteristics of the Earth's magnetic field using a smartphone magnetic sensor. *Physics Education*, 57(4), 045021. <https://doi.org/10.1088/1361-6552/ac61f0>

**Abstract:** Several properties of Earth's magnetic field (field vectors, time dependence) are measured in various locations using a smartphone/tablet magnetic sensor. To enable a proper use of the magnetic sensor as a classroom tool, the exact location of the sensor in the device and its resolution must be identified in a first step. Then, students may perform several measurements on their own, allowing a comparison of the recorded field vectors and a discussion of the possible deviations. We also show that long-time measurements

of the local magnetic field are possible using the smartphone sensors, which can be compared to available internet data. All the information obtained enables a better understanding of the properties of the Earth's magnetic field and of the requirements for real applications of magnetic sensor elements.

**Keywords:** smartphone, magnetic sensor, Earth magnetic field

28. Özdemir, E., & Coramik, M. (2022). Development of a virtual teaching environment with Algodoo: 'eye' and 'cactus type light source' models. *Physics Education*, 57(4), 045022. <https://doi.org/10.1088/1361-6552/ac60b0>

**Abstract:** It is often necessary to enrich the teaching environment in order for students to learn optics in depth and to interpret the real optical situations with the information they have learned. In this study, a virtual teaching environment was developed using by Algodoo, a 2D simulation software. An eye model was created in order to explain the formation of the image in the eye in the teaching environment. Also, a cactus type light source model has also been developed to demonstrate that the image can be created in optics by using rays other than special rays. In order to show the success of the virtual teaching environment in modelling, previously known situations that the students had difficulty in understanding were simulated. Finally, some suggestions were made about the use of the virtual teaching environment.

**Keywords:** optics, eye, Algodoo, simulation, field of view

29. Phayphung, W., Rakkapao, S., & Prasitpong, S. (2022). Young's modulus determination for a vibrated metal ruler using Arduino. *Physics Education*, 57(4), 045023. <https://doi.org/10.1088/1361-6552/ac60af>

**Abstract:** The article introduces a low-cost Arduino sensor into the Young's modulus determination laboratory for physics university students. A stainless steel ruler is used as a cantilever beam. Its free end attached a mass is slightly bent and released to make it oscillate as a simple harmonic motion. The Arduino sensor detects the moving mass's frequency at different loaded forces. This technique shows an acceptable value of Young's modulus for the used ruler.

**Keywords:** Young's modulus, Arduino, steel ruler

30. Stolzenberger, C., Frank, F., & Trefzger, T. (2022). Experiments for students with built-in theory: 'PUMA: Spannungslabor' – an augmented reality app for studying electricity. *Physics Education*, 57(4), 045024. <https://doi.org/10.1088/1361-6552/ac60ae>

**Abstract:** With the help of augmented reality apps objects and text can be added virtually to the physical world (e.g. physical experiments) in real time. The augmented reality (AR) app 'PUMA: Spannungslabor' enhances simple electric circuits experiments for students with virtual representations based on the electron gas analogy including visualisations of interior processes in various components such as lamps and resistors.

This opens up new possibilities for connecting theory and experiment in secondary school physics teaching. While using the AR app students are enabled to acquire qualitative and semi-quantitative knowledge about the basic concepts of current, voltage, potential, and resistance as well as the laws of series and parallel circuits easier and more directly. This holistic approach of learning through experiments can facilitate a deeper and more interconnected understanding of the topics covered in physics lessons.

**Keywords:** augmented reality, AR, electricity, physics, electron gas model

31. Rodrigues, M., & Carvalho, P. S. (2022). Virtual experimental activities: a new approach. *Physics Education*, 57(4), 045025. <https://doi.org/10.1088/1361-6552/ac5f77>

**Abstract:** Nowadays, students have digital skills that are much larger than any other student in the past. Traditional experiments in a real laboratory are still fundamental, however an increasing number of computers can be used to simulate experiments close to the experimental environment. This can be seen as a great advantage for science learning, as students are more involved with various contexts that are freely available in digital resources but are difficult or not easily reproduced in the real laboratory. In this study we present a new perspective for pedagogical computational simulations to complement and/or support experimental activities at school. We call these simulations virtual experimental activities (VEAs). These are virtual environments that simulate real complex physical phenomena, to be studied by the user (student) from an investigational perspective. With VEAs, teachers can help students develop skills in terms of experimental research and extend the experimental activity beyond the laboratory class. Almost all experimental features and skills can be trained with this type of simulation, except for physical dexterity with real instruments and experimental sets. To complement our exposition, we present a simple VEA as an example to show how it can be used at school.

**Keywords:** simulations, virtual experiments, active learning, physics education, physical modelling

32. Ozdes Koca, N. (2022). Assessing the concepts of electricity and magnetism of science and engineering students. *Physics Education*, 57(4), 045026. <https://doi.org/10.1088/1361-6552/ac57bd>

**Abstract:** This work is aimed to assess the performance of two groups of students from colleges of Science, Education and Engineering on the understanding of electricity and magnetism concepts. To conduct this assessment, the Electricity and Magnetism Conceptual Assessment (EMCA) test was implemented twice as a pre-test and a post-test for two calculus-based physics-2 courses offered at the Sultan Qaboos University in Oman in the Spring & Fall 2019 semesters. These courses cover the topics of electricity, magnetism and partly thermal physics. The normalized gains for both groups of students are in the medium gain category. The performance of genders in the EMCA is not statistically distinguishable. The students' misconceptions are identified and compared with those obtained elsewhere.

**Keywords:** EMCA test, physics and engineering education, Hake's normalized gain, gender, misconceptions

33. Ndiokubwayo, K., Uwamahoro, J., & Ndayambaje, I. (2022). Assessment of Rwandan physics students' active learning environments: classroom observations. *Physics Education*, 57(4), 045027. <https://doi.org/10.1088/1361-6552/ac69a2>

**Abstract:** Science teaching in general and physics teaching in particular often fail to meet the challenges of motivating and engaging learners. Consequently, students do not adequately understand concepts, leading to the poor acquisition of expected practical skills. In response to this need, we conducted a study to document physics teachers' instructional practices and students' learning environments in Rwandan secondary schools. We used the Classroom Observation Protocol for Undergraduate STEM to collect data. For three months, we observed 34 geometric optics lessons for nine Senior-4 Physics teachers and 28 physical optics lessons for seven senior-5 Physics teachers. The results indicate that learner-learner active engagement during group work takes 19% of a 2 min time interval. In comparison, learner-teacher active engagement during teacher guide and questioning take 36.8% and 46.5% of a 2 min time interval, respectively. How teachers and students spend time on each classroom activity was analysed, and recommendations for student engagement were also discussed.

**Keywords:** physics teaching, student engagement, active learning, Rwandan classroom practices, COPUS

34. Vieira, L. P., & Aguiar, C. E. (2022). The sound of the udu. *Physics Education*, 57(4), 045028. <https://doi.org/10.1088/1361-6552/ac69a1>

**Abstract:** The udu is a traditional Nigerian percussion instrument that can be thought of as a Helmholtz resonator with two apertures. We use a simple two-particle mechanical analogue to study the behaviour of such a resonator and find that the model describes quite well the main features of udu acoustics.

**Keywords:** udu, acoustics, Helmholtz resonator

35. Brown, C. P., Cook, K. R., Beales, P. A., & Dougan, L. (2022). SAWstitch: exploring self-avoiding walks through hand embroidery. *Physics Education*, 57(4), 045029. <https://doi.org/10.1088/1361-6552/ac6929>

**Abstract:** A self-avoiding walk (SAW) is a sequence of moves on a grid that does not visit the same point more than once. SAWs are used to study how networks form, including social networks, biological networks and computer networks, and have provided inspiration to scientists, artists and designers. Here we describe a collaborative project which aims to deliver public engagement activities that embrace creative thinking to explore SAWs through the medium of hand embroidery. We introduce the physics of SAWs and then present an activity which uses materials from hand embroidery to explore these concepts. Specifically, the activity makes use of a Maker Kit which contains all the

materials needed to create SAWs on an embroidery hoop. We evaluate the impact of the Maker Kits and reflect on the opportunities provided by a creativity-led engagement activity for physics teaching and research.

**Keywords:** random walks, networks, creativity, public engagement, art-science interface

36. Thompson, F. (2022). Vibrational spectroscopy in materials. *Physics Education*, 57(4), 045030. <https://doi.org/10.1088/1361-6552/ac65d2>

**Abstract:** An absorption line at 900 nm has been observed in Perspex. Samples of 1 and 2 cm thickness were used and the integrated absorption (line width times peak absorption) of the line was proportionate to the thickness. Facilities for lowering the sample temperature were not available and therefore both measurements were carried out at room temperature. A Red Tide spectrophotometer was used to measure this absorption. According to the Optics Group at National Institute of Standards and Technology, USA, the line can be assigned to the *3rd overtone CH stretch of the methyl and methylene group*. The present result was compared with historic data for boron impurities in indium phosphide to demonstrate the versatility of this form of spectroscopy

**Keywords:** polymeric material, near infrared, atomic vibrations

37. Costa, V. A. F. (2022). A unifying network approach for circuits simplification and equivalent resistances, capacitors and inductors evaluation. *Physics Education*, 57(4), 045031. <https://doi.org/10.1088/1361-6552/ac65d1>

**Abstract:** It is proposed a network approach for electric circuits simplification, that through a unified systematic procedure allows simplifying circuits of any complexity, and evaluation of the equivalent resistances, capacitors and inductors. Circuits to be simplified are characterized by their nodes, and by the elements of different types (resistances, capacitors and inductors) connecting each pair of nodes. Once that information organized in the matrix form, circuit simplification is straightforward based on the simplification conditions, which are key elements of the proposed approach. Simplification process evolves eliminating nodes from the original circuit, node by node, and evaluating the equivalent element types connecting the remaining nodes, up to the required simplification level. The key elements of the simplification procedure are the same for all the element types. For circuits with elements of different types simplification can be made in a segregated way, each time for one element type, or simultaneously for all the element types. The simplification procedure can be used with pencil and paper, or easily programmed for automatic and fast circuits simplification. Use of the proposed approach is illustrated through some appealing examples.

**Keywords:** circuits, simplification, network approach, matrix treatment, equivalent resistance, equivalent capacitor, equivalent inductor

38. Hachmi, A., El Hadi, M., Essaadaoui, R., Mommadi, O., Ouariach, A., & El Moussaouy, A. (2022). Development of an educational device, based on Arduino, to facilitate the understanding of light diffraction. *Physics Education*, 57(4), 045032. <https://doi.org/10.1088/1361-6552/ac65d0>

**Abstract:** The Arduino board and its communication with several sensors are becoming more and more popular in the physical science community. They offer inspiring possibilities for learning different physical concepts. In this article, we focused on creating a very practical educational system for experimenting with diffraction of laser light and graphically visualizing the distribution of light intensity in space, which is impossible to perform it with the devices available in the educational laboratories of physics. The main elements of this configuration are the Arduino UNO microcontroller board, the BH1750 sensor and the NEMA17 motor and its A4990 driver. The results' graph is displayed in real time on the computer using the Data Streamer add-in. We see that the abbreviated curve corresponds well to the theory. In addition, feedback from the participants in the test activity of the device showed that they were satisfied with its operation and its contribution to the understanding of diffraction. Therefore, we believe that the device presented can play a very important role in the diffraction phenomenon learning because of its high precision and reliability in the measurements.

**Keywords:** NEMA17 motor, BH1750 sensor, physics education

39. Balta, N., & Logman, P. S. W. M. (2022). Development of counterintuitive basic electric DC circuits test. *Physics Education*, 57(4), 045033. <https://doi.org/10.1088/1361-6552/ac61ef>

**Abstract:** The purpose of this study is to develop a test to assess students' level of counter intuitiveness in basic electric circuits. Data from four samples were gathered and used to develop and validate the counterintuitive basic electric circuit test (CBECT). The initial version of the CBECT was administered to the first sample and data collected from this sample were used for the pilot study. The aim of the data collected from the second sample was to comb out the items that were not counterintuitive. The data collected from the third sample were used for concurrent validity issues while data from the fourth sample was used for the test-retest reliability analysis. Finally, 26 items that can be used to determine counterintuitive cases in basic electric circuits at the high school level were constructed.

**Keywords:** basic electric circuits, counterintuitive physics, test development

40. White, A. E. (2022). Cloud chamber kit for active learning in a first-year undergraduate nuclear science seminar class. *Physics Education*, 57(4), 045034. <https://doi.org/10.1088/1361-6552/ac5f0e>

**Abstract:** This paper presents the design and reports on the use of a simple and inexpensive cloud chamber kit that is compatible with active learning, experiential learning, and project-based learning strategies. The kit was developed for use in a first-

year undergraduate nuclear science seminar class at a university in the US. Diffusion cloud chambers are commonly used in classroom demonstrations to teach students about cosmic rays and ionizing radiation. A variety of clever and novel cloud chambers found in the literature were built and tested as part of this work and are all suitable for instructor-led classroom demonstrations. However, each has drawbacks that limit its use in hands-on classroom activities as part of active learning, experiential learning, and project-based learning in the classroom. The purpose of this work was to develop a cloud chamber 'kit' that can be built in less than 10 min by students during class and guarantees student success in observing background radiation. The cloud chamber kit was found to be highly sensitive to background radiation, and several different types of high-energy particles, including muons or anti-muons, electrons or positrons, photoelectrons, and alpha particles, were detected and identified using the kits at a rate of over 20 tracks per minute measured indoors at sea level at latitude  $42.3601^\circ$  N. The simplicity of the cloud chamber kit presented here makes it compatible with a variety of best practices for active learning in the classroom and requires little preparation time outside of class.

**Keywords:** cloud chamber, cloud chamber kit, cosmic rays, ionizing radiation, background radiation, active learning, project based learning

41. Blanco, P. R. (2022). Learning about rockets, in stages. *Physics Education*, 57(4), 045035. <https://doi.org/10.1088/1361-6552/ac6928>

**Abstract:** A rocket must carry the fuel it expels in order to accelerate its structure and payload. The rocket equation relates the change in speed to the fuel mass expelled. To launch a spacecraft into Earth orbit requires a multi-stage rocket, since otherwise the mass of fuel required would be prohibitive. While the details vary among historical and current launch vehicles, the advantages and physical principles of staging can be demonstrated by analysing the simpler case of a two-stage rocket in free space. I show that a two-stage rocket produces a higher payload speed than a single-stage rocket with the same fuel and structural mass, and introduce the concept of *optimal* staging to maximise this speed. I also examine how mechanical energy extracted from the expelled fuel is distributed between the stages, payload capsule, and exhaust. A surprising result is that the two-stage rocket deposits more energy into the exhaust stream than its single-stage counterpart. I suggest further investigations that are appropriate for advanced high school or undergraduate students of physics or aerospace engineering. Supplementary materials are provided online for classroom use.

**Keywords:** rocketry, spaceflight, momentum, kinetic energy

42. Cross, R. (2022c). Precession of a ball rolling in a circular path. *Physics Education*, 57(4), 045036. <https://doi.org/10.1088/1361-6552/ac6eb6>

**Abstract:** If a ball rolls in a circular path on a horizontal surface at constant speed then its horizontal rotation axis changes direction with time. A simple experiment is presented showing that the torque applied to the ball is equal to the rate of change of its

angular momentum, even though the magnitudes of its angular velocity and angular momentum remain constant in time.

**Keywords:** angular momentum, torque, rotation axis

43. Acuña-Umaña, K., Gómez-Quirós, C., & Herrera-Sancho, O. A. (2022). From atoms to stars: an interactive theatre play based on 'The Little Prince' novella to describe spatial thinking. *Physics Education*, 57(4), 045037. <https://doi.org/10.1088/1361-6552/ac6eb5>

**Abstract:** The implementation of theatre as a didactic tool for teaching science provides a new perspective on the importance of interdisciplinary approaches in the construction of meaningful learning experiences. Gamification and collaborative work are functional strategies to teach scientific concepts in a creative way. However, there are still conceptual issues about spatial thinking that are difficult for students to understand owing to the lack of visualization of objects and their development through a characteristic chronicle. Here we show an innovative way to unifying science, technology, engineering, arts and mathematics (STEAM) careers through the development of an interactive theatrical play inspired by *The Little Prince* novella, to promote a culture of integration of science, theatre and literature. One of the more significant findings to emerge from this study is that the didactic strategies used are key ingredients in order to design an unique theatre play based on a link between history of atomic models and literature towards full understanding of spatial macroscales and microscales thinking. Due to the successful in the qualitative assessment results, we are devising to continue exploring the use of these didactic strategies to achieve an integrated and greater impact on students' learning processes.

**Keywords:** interdisciplinary learning, atomic models, fantasy novel, gamification, spatial thinking

44. Kaps, A., & Stallmach, F. (2022). Development and didactic analysis of smartphone-based experimental exercises for the smart physics lab. *Physics Education*, 57(4), 045038. <https://doi.org/10.1088/1361-6552/ac68c0>

**Abstract:** Smartphone-based experimental exercises were incorporated as part of the homework problems in an introductory mechanics course at a university. A quasi-experimental field study with two cohorts design was performed to measure the impact of such exercises on motivation, interest and conceptual understanding. The empirical results on learning achievement show a significant positive influence of the smartphone-based experimental exercise for the dynamics of rigid bodies topic with a medium effect size of  $d=0.42$ . For the analysis of rotational motion topic, a positive learning achievement for both groups was evidenced, but the effect size of the smartphone-based exercise was rather small at  $d=0.20$ . The intrinsic and germane cognitive loads turned out to be similar at an intermediate level for both groups. However, the extrinsic cognitive load for the intervention group decreased significantly, which might be the reason why more complex experimental exercises foster conceptual understanding.

**Keywords:** smart physics lab, mechanics, cognitive load, learning achievement, smartphone,, based exercises

45. Nezhad, M. P. (2022). On the merits of a unified physics and engineering undergraduate programme of study. *Physics Education*, 57(4), 045501. <https://doi.org/10.1088/1361-6552/ac529a>

**Abstract:** The merits of a pedagogic and programmatic unification between physics and several engineering disciplines at the undergraduate level are discussed. Arguments for such a unification are presented, based on the strong overlap of core teaching material and the similarity of career trajectories in the modern job market for physics and engineering graduates. In addition to providing a level of robustness for academic institutions against external factors such as fluctuating student intake numbers, such a merger can also have positive dividends for increased inclusion of minority and female students in STEM fields. The widespread availability and affordability of advanced laboratory equipment, computing hardware/software and other technical infrastructure at the current time is also highlighted as a reason for the practical feasibility of this approach.

**Keywords:** engineering pedagogy, physics pedagogy, STEM, diversity, undergraduate curriculum design

## PSYCHOLOGY IN THE SCHOOLS

1. Park, S., & Nelson, G. (2022). The quality of outcome measure reporting in early numeracy intervention studies. *Psychology in the Schools*, 59(9), 1721–1736. <https://doi.org/10.1002/pits.22726>

**Abstract:** There is an increased demand for useful measures that capture students' math learning during intervention. Similarly, there is an awareness of the importance of researchers observing guidelines for study quality in publishing intervention results, including information related to outcome measures. We investigated the characteristics of outcome measures to assist researchers and practitioners in selecting appropriate outcome measures for early numeracy interventions. We also explored the level of quality regarding how studies reported outcome measure information. To do this, we analyzed 94 outcome measures of math achievement across 25 kindergarten early numeracy intervention studies. Overall, studies met 84% of the quality indicators related to outcome measures. Fewer studies met the recommendation to include multiple measures (i.e., proximal and distal measures; 60%) or provide validity information about measures (39%). Ultimately, the results of this study provide researchers with valuable information for developing and selecting outcome measures to determine the effectiveness of early numeracy interventions.

**Keywords:** early numeracy, interventions, math, outcome measures, quality

2. Schütz, J., Schipper, N., & Koglin, U. (2022). Bullying in school and cyberbullying among adolescents without and with special educational needs in emotional–social development and in learning in Germany. *Psychology in the Schools*, 59(9), 1737–1754. <https://doi.org/10.1002/pits.22722>

**Abstract:** Bullying in school and cyberbullying are highly relevant issues. Students with special educational needs in emotional–social development and learning show individual characteristics that could be risk factors for bullying perpetration and victimization (e.g., externalizing behavior problems or poor social skills). Therefore, the present study was carried out to explore differences in school bullying and cyberbullying between adolescents without and with the aforementioned special educational needs. A cross-sectional questionnaire study was carried out with  $N = 649$  ( $M_{\text{age}} = 13.66$ ,  $SD = 2.17$ , 61% boys and 39% girls) participants from Lower Saxony (Germany). Analyses of covariance only revealed differences regarding school bullying. Adolescents with special educational needs in emotional–social development were significantly more often bullying perpetrators. For the victim role, there are no differences between the groups without and with special educational needs in emotional–social development and in learning. The externalizing behavior problems of adolescents were considered to be the main predictor of bullying behavior and victim experiences. To imply targeted bullying interventions and preventions further research is needed focusing on characteristics, risk, and protective factors of special educational needs in emotional–social development.

**Keywords:** bullying in school, cyberbullying, special educational needs

3. Mukund, B., & Jena, S. P. K. (2022). Qualitative analysis of school children's experience of receiving "Coping Cat program": A cognitive behavioral therapy program for high anxiety. *Psychology in the Schools*, 59(9), 1755–1775. <https://doi.org/10.1002/pits.22725>

**Abstract:** Coping Cat-cognitive behavior therapy (CBT) is a 16-week program, which has been used widely and has proven its efficacy in helping children in overcoming anxiety disorders. This research study intends to explore its efficacy on Indian school children with high anxiety in Delhi. The study aims at qualitative assessment of the experience of children with anxiety after intervention with Coping Cat-CBT. After the Coping Cat-CBT intervention, semistructured interviews were conducted with the children. Participants: Children aged 11–13 years exhibiting the symptoms of high anxiety were enrolled in the study. They were asked to write down their experience after the Coping Cat-CBT intervention. Data were analyzed using the inductive approach of qualitative content analysis. Participants expressed that the intervention was beneficial in terms of their ability to combat anxiety experienced in day-to-day life, and reported improvements in various domains of life such as scholastic performance, interpersonal relationships, and successful use of coping skills in handling fearful situations and relaxation techniques in overcoming anxiety. The data provided empirical evidence that Indian children with anxiety-related problems could benefit from the therapy. Coping Cat-CBT was efficacious in reducing their symptoms of anxiety.

**Keywords:** coping cat-CBT, high anxiety, intervention, qualitative content analysis, therapeutic experience

4. Luo, X., & Hu, C. (2022). Loneliness and sleep disturbance among first-year college students: The sequential mediating effect of attachment anxiety and mobile social media dependence. *Psychology in the Schools*, 59(9), 1776–1789. <https://doi.org/10.1002/pits.22721>

**Abstract:** Sleep issues impair students' health and success. This study constructed a sequential mediating model to examine whether attachment anxiety and mobile social media dependence mediated the relationship between loneliness and sleep disturbance. A total of 487 university freshmen (42.09% females, 57.91% males; mean age = 18.19 years) were enrolled in this study and completed self-report measures of loneliness, sleep disturbance, attachment anxiety, and mobile social media dependence. (1) There were significant positive correlations between loneliness and sleep disturbance. (2) College students' sleep disturbance was affected by loneliness partly through three different pathways: the mediating effect of attachment anxiety, the mediating effect of mobile social media dependence, and the sequential mediating effect of attachment anxiety and mobile social media dependence. Loneliness could positively predict sleep disturbance and attachment anxiety and mobile social media dependence played important mediating roles in this relationship. These findings contribute to a more comprehensive understanding of the factors for sleep disturbance.

**Keywords:** attachment anxiety, college freshmen, loneliness, mobile social media dependency, sleep disturbance

5. Pilotti, M. A. E., Nazeeruddin, E., Alkuhayli, H., & Elmoussa, O. (2022b). Predicting performance of Middle Eastern female students: A challenge for sustainable education. *Psychology in the Schools*, 59(9), 1790–1801. <https://doi.org/10.1002/pits.22715>

**Abstract:** The present research aimed to uncover individual differences that can be used to predict, at the start of a course, performance difficulties in female students of an understudied population who are at the beginning of their academic journey. Measures of active and passive procrastination and general self-efficacy were collected at the start of the semester from students enrolled in one of two courses representative of the general education curriculum at a university in the Middle East. Grades on the first homework assignment and test in each course were used as indices of students' early performance. Measures of procrastination and self-efficacy failed to adequately predict either early performance or attendance rates. Yet, attendance predicted a portion of the variance in assignment performance. This study suggests that class presence, rather than dispositional individual differences, can shape the early academic success of an understudied student population.+

**Keywords:** academic success, Middle East, procrastination, self efficacy

6. Thomas, C. L., & Heath, J. A. (2022). Using latent profile analysis to investigate emotional intelligence profiles in a sample of American university students. *Psychology in the Schools*, 59(9), 1802–1824. <https://doi.org/10.1002/pits.22731>

**Abstract:** Numerous empirical investigations have explored the contribution of emotional intelligence to academic success. Although these studies have contributed to the literature, most have adopted variable-centric analytic approaches that may mask our understanding of the nuanced association between emotional intelligence, noncognitive factors, and academic success. Therefore, the current study was designed to identify unique emotional intelligence profiles using latent-class analysis. A convenience sample of university students ( $N = 432$ , 79.7% Caucasian, 80.62% female, 18–65 years old,  $\mathop{X}\limits^{\wedge}, \$_{Age} = 21.55 \pm 5.47$ ) attending two public universities completed the Brief Emotional Intelligence Scale, Brief Cope Inventory, Inventory of School Motivation, Engagement Versus Disaffection with Learning Scale, Cognitive Test Anxiety Scale-2nd Edition, and Perceived Stress Scale. The sample consisted of freshman (13.87%), sophomore (32.53%), junior (35.16%), senior (13.15%), and master's (5.26%) students. Using latent profile analysis, we identified four unique emotional intelligence profiles which differed along competencies identified in the ability model of emotional intelligence. Follow-up analyses indicated that problem and social-focused coping strategies, mastery orientation, and behavioral and emotional engagement contributed to the separation of students belonging to the identified profiles. Our discussion focuses on the importance of fostering emotional intelligence within higher education settings to support student success.

**Keywords:** cognitive test anxiety, emotional intelligence, latent profile analysis, student engagement

7. Merle, J. L., Larson, M. F., Cook, C. R., Brewer, S. K., Hamlin, C., Duong, M., McGinnis, J. L., Thayer, A. J., Gaias, L. M., & Lyon, A. R. (2022). A mixed-method study examining solutions to common barriers to teachers' adoption of evidence-based classroom practices. *Psychology in the Schools*, 59(9), 1825–1843. <https://doi.org/10.1002/pits.22732>

**Abstract:** We conducted a mixed-method focus group study to (a) assess the appropriateness and likely effectiveness of strategies that target individual behavior change mechanisms associated with perceived barriers of lack of time and unsupportive leadership and (b) identify recommendations regarding strategies for overcoming the barriers. Sample included 39 school-based staff (80% female, 77% White) across two districts in the Midwest. Mixed methods included a simultaneous approach. Lack of time and unsupportive leadership continue to pervade school-based implementation efforts. Recommendations centered around the need for school leaders to give teachers the power to re-prioritize how they spend their time as well as providing protected, facilitated time for teachers to collaborate and learn practical skills targeting self-advocacy. Our findings provide compelling evidence for the use of implementation methodology to strategically target mechanisms of individual behavior change during the process of incorporating new and innovative practices in schools.

**Keywords:** barriers, implementation, leadership, schools, teachers, time

8. Ciuhan, G. C., Nicolau, R. G., & Iliescu, D. (2022). Perceived stress and wellbeing in Romanian teachers during the COVID-19 pandemic: The intervening effects of job crafting and problem-focused coping. *Psychology in the Schools*, 59(9), 1844–1855. <https://doi.org/10.1002/pits.22728>

**Abstract:** This study examines the relationship between teacher perceived stress during the online period of schooling in the coronavirus disease 2019 pandemic, and their wellbeing, with job crafting as a mediator, The study also examines the role of problem-focused coping as a moderator in the stress-job crafting relationship. A sample of 360 teachers, 347 females, and 13 males, aged 21–63 years answered to an online survey from October to December 2020. Regression analyses were employed to the data. The results show that the conditional indirect effects of stress on wellbeing are statistically significant for low problem-focused coping ( $\beta = -.06$ ,  $SE = 0.02$ ,  $p < .001$ ), whereas for high problem-focused coping the effects are not statistically significant ( $\beta = .01$ ,  $SE = 0.01$ ,  $p > .05$ ). The effects of stress on wellbeing are mediated by job crafting for teachers who score low on problem-focused coping.

**Keywords:** job crafting, perceived stress, problem-focused coping, well-being

9. Ma, M., Li, M., Wang, Q., Qiu, A., & Wang, T. (2022b). Online self-regulated learning and academic procrastination: A moderated mediation model. *Psychology in the Schools*, 59(9), 1856–1872. <https://doi.org/10.1002/pits.22730>

**Abstract:** Online learning has recently replaced traditional offline learning as the mainstream learning model for Chinese college students owing to the COVID-19 pandemic. This study examined the relationship between online self-regulated learning and academic procrastination among 1149 Chinese undergraduates who participated in online learning. The effects of online self-regulated learning on academic procrastination and whether it was mediated by attention control and moderated by peer support were investigated. Mediation analyses revealed that attention control partially mediates online self-regulated learning and academic procrastination. Peer support moderated the direct effect of online self-regulated learning and the mediating effect of attention control on academic procrastination. Our findings provide important ways to reduce academic procrastination and mitigate the adverse impacts of online learning.

**Keywords:** academic procrastination, attention control, online self-regulated learning, peer support

10. Stuckey, A., Albritton, K., & Cruz, K. (2022). Research to practice to research: Examining who, how, what, when, and where for early literacy interventions within tiered frameworks. *Psychology in the Schools*, 59(9), 1873–1905. <https://doi.org/10.1002/pits.22735>

**Abstract:** Tiered frameworks, such as Response to Intervention (RtI), have become a primary approach within K-12 settings for identifying children who may need additional intervention. Recent literature suggests RtI is also occurring in many early childhood programs, and early literacy is often an area of focus. While there are data indicating improved outcomes for children who received early literacy intervention, we had many unanswered questions regarding the characteristics of early literacy interventions implemented with young children within RtI frameworks. Using Preferred Reporting Items for Systematic Reviews and Meta-analyses guidelines, we conducted a systematic review of the literature to understand *who* the studies were about, *how* the researchers identified children in need of higher tiers of support, *what* content was emphasized through *which* intervention methods, and *where* and *when* the interventions occurred. Our findings indicate that intervention studies overwhelmingly occurred with young children from racially and ethnically minoritized communities and economically marginalized backgrounds. Interventions focused on early literacy skill areas related to later reading achievement and were often delivered by members of research teams. We discuss implications for practitioners striving to implement research-based interventions in their classrooms. We also discuss implications for researchers seeking to design and implement early literacy intervention studies with practical applicability.

**Keywords:** early literacy intervention, equity, tiered frameworks

11. Greenspan, S. B., Whitcomb, S. A., Santana, Z. A., Fefer, S., & Hayden, L. (2022b). Social-emotional learning and physical activity in schools: Practitioner perspectives and initial measurement development. *Psychology in the Schools*, 59(9), 1906–1921. <https://doi.org/10.1002/pits.22733>

**Abstract:** School mental health (SMH) practitioners and physical education (PE) teachers have been identified as key stakeholders in supporting the integration of social-emotional learning (SEL) and physical activity within schools. Authors of this study developed and administered a survey measure to delineate SMH practitioners' (i.e., school psychologists, school counselors;  $n = 219$ ) and PE teachers' ( $n = 138$ ) perspectives of social-emotional learning (SEL) and PA, and aligning these practices within their work. There were two forms of the measure developed, with one for each stakeholder group. The analytic procedure involved Exploratory Factor Analysis (EFA), descriptive statistics, and analysis of mean differences using independent sample  $T$  tests at the factor level. The SMH form brought forth three factors (linking practices, need for training, and current practices), and the PE form brought forth two factors (linking practices and need for training). Survey results suggest that both SMH practitioners and PE teachers agree that there is inherent value in youths' engagement in both SEL and PA and would like increased training to incorporate such practices within their unique roles. SMH professionals rate on average that they “neither agree nor disagree” that they integrate PA within their work. Implications are discussed for both research and practice.

**Keywords:** mental health, physical activity, school, social-emotional learning

12. Feng, T., Wang, X., Chen, Q., Liu, X., Yang, L., Liu, S., & Zhang, Y. (2022). Sympathy and active defending behaviors among Chinese adolescent bystanders: A moderated mediation model of attitude toward bullying and school connectedness. *Psychology in the Schools*, 59(9), 1922–1936. <https://doi.org/10.1002/pits.22736>

**Abstract:** This study tested the mediating role of bullying attitudes and moderating role of school connectedness in the link between sympathy and Chinese adolescents' active defending behaviors in bullying. Participants were 808 Chinese adolescents (53.3% male,  $M_{\text{age}} = 12.40$ ,  $SD = 0.50$ ). The results showed that sympathy was significantly positively correlated with active defending behaviors through bullying attitudes. In addition, school connectedness could moderate the relationship between sympathy and active defending behaviors. Specifically, the positive correlation between sympathy and active defending behaviors was stronger for adolescents with a high level of school connectedness. These findings emphasize the importance of considering complex multiple ecological level factors when examining bullying bystander.

**Keywords:** active defending behaviors, attitude toward bullying, bullying, school connectedness, sympathy

## PSYCHOLOGICAL REVIEW

1. Logan, G. D., Cox, G. E., Annis, J., & Lindsey, D. R. B. (2021). The episodic flanker effect: Memory retrieval as attention turned inward. *Psychological Review*, 128(3), 397–445. <https://doi.org/10.1037/rev0000272>

**Abstract:** This article tests the conjecture that memory retrieval is attention turned inward by developing an episodic flanker task that is analogous to the well-known perceptual flanker task and by developing models of the spotlight of attention focused on a memory list. Participants were presented with a list to remember (ABCDEF) followed by a probe in which one letter was cued (# # C # # #). The task was to indicate whether the cued letter matched the letter in the cued position in the memory list. The data showed classic results from the perceptual flanker task. Response time and accuracy were affected by the distance between the cued letter in the probe and the memory list (# # D # # # was worse than # # E # # #) and by the compatibility of the uncued letters in the probe and the memory list (ABCDEF was better than STCRVX). There were six experiments. The first four established distance and compatibility effects. The fifth generalized the results to sequential presentation of memory lists, and the sixth tested the boundary conditions of distance and flanker effects with an item recognition task. The data were fitted with three families of models that apply space-based, object-based, and template-based theories of attention to the problem of focusing attention on the cued item in memory. The models accounted for the distance and compatibility effects, providing measures of the sharpness of the focus of attention on memory and the ability to ignore distraction from uncued items. Together, the data and theory support the conjecture that memory retrieval is attention turned inward and motivate further research on the topic.

**Keywords:** selective attention; focused attention; cued recognition; serial order

2. Dell, G. S., Kelley, A. C., Hwang, S., & Bian, Y. (2021). The adaptable speaker: A theory of implicit learning in language production. *Psychological Review*, 128(3), 446–487. <https://doi.org/10.1037/rev0000275>

**Abstract:** The language production system continually learns. The system adapts to recent experiences while also reflecting the experience accumulated over the lifetime. This article presents a theory that explains how speakers implicitly learn novel phonotactic patterns as they produce syllables. The learning is revealed in their speech errors. For example, if speakers produce syllable strings in which the consonant /f/ is always a syllable onset, their slips will obey this rule; /f/'s will then slip mostly to onset positions. The article reviews over 30 phenomena related to this finding. To explain phonotactic learning, the article presents four linked “mini-theories,” each of which addresses components of the data. The first mini-theory, the production theory, provides an account of how speech errors arise during the assembly of word forms. The second, the learning theory, characterizes the implicit learning of phoneme distributions within the production system. The third mini-theory, the consolidation theory, augments the learning theory to explain instances in which this learning depends on a period of time, possibly a sleep period, before it is expressed. The final mini-theory, the developmental

theory, addresses cases in which learning varies between children and adults, and depends on speakers' early linguistic experience. The resulting theory forges links between these diverse aspects of psychology.

**Keywords:** implicit learning, language production, speech errors, memory consolidation

3. Kovacs, P., Hélie, S., Tran, A. N., & Ashby, F. G. (2021). A neurocomputational theory of how rule-guided behaviors become automatic. *Psychological Review*, 128(3), 488–508. <https://doi.org/10.1037/rev0000271>

**Abstract:** This article introduces a biologically detailed computational model of how rule-guided behaviors become automatic. The model assumes that initially, rule-guided behaviors are controlled by a distributed neural network centered in the prefrontal cortex, and that in addition to initiating behavior, this network also trains a faster and more direct network that includes projections from sensory association cortex directly to rule-sensitive neurons in the premotor cortex. After much practice, the direct network is sufficient to control the behavior, without prefrontal involvement. The model is implemented as a biologically detailed neural network constructed from spiking neurons and displaying a biologically plausible form of Hebbian learning. The model successfully accounts for single-unit recordings and human behavioral data that are problematic for other models of automaticity.

**Keywords:** rule-guided behaviour, automaticity, prefrontal cortex, computational neuroscience

4. Heller, J. (2021). Internal references in cross-modal judgments: A global psychophysical perspective. *Psychological Review*, 128(3), 509–524. <https://doi.org/10.1037/rev0000280>

**Abstract:** We are able to compare intensities across different sorts of stimuli, like in matching the brightness of visual stimuli of different hue, or the loudness of auditory stimuli of different spectral shapes. We can even match the brightness of a visual stimulus to the loudness of a tone, and vice versa. The term cross-dimensional matching is used to subsume these kinds of intra- and cross-modal tasks. The often replicated regression effect in cross-dimensional matching relates to the observation that the intensity of whatever stimulus is adjusted exhibits a tendency toward some mean magnitude, which is interpreted as serving as an internal reference. Internal references, however, are not part of psychophysical theory in the tradition of Stevens. They form a key ingredient for the theory of global psychophysics initiated by R. Duncan Luce, which also makes explicit Stevens' assumption of an underlying ratio scale of perceived intensity to which all sensations map, and renders it empirically testable. The present article generalizes Luce's theory of cross-dimensional magnitude production (Luce et al., 2010) to integrate potentially role-dependent internal references (pertaining to the standard, or the adjusted stimulus) as suggested by the regression effect. Reconsidering available empirical evidence for magnitude production and matching experiments in the light of these theoretical developments leads to a coherent picture. The results indicate that internal references are role-dependent in cross-dimensional tasks (intra- or cross-

modal), but role-independent in intra-dimensional tasks. Moreover, predictions derived from the generalized theory provide a close fit to classical matching data.

**Keywords:** cross-modal matching, magnitude production, global psychophysics, regression effect in psychophysical judgements, internal reference

5. Johns, B. T. (2021). Disentangling contextual diversity: Communicative need as a lexical organizer. *Psychological Review*, 128(3), 525–557. <https://doi.org/10.1037/rev0000265>

**Abstract:** Contextual diversity (CD; Adelman, Brown, & Quesada, 2006) modifies word frequency by ignoring word repetition in context. It has been repeatedly found that a CD count provides a better fit to lexical organization data than does word frequency (e.g., Adelman & Brown, 2008; Brysbaert & New, 2009). The importance of CD has been interpreted with the principle of likely need, adapted from the rational analysis of memory (Anderson & Schooler, 1991), which states that words that have been used in many past contexts are more likely to be needed in a future context. Central to the cognitive mechanisms of computing likely need is a definition of linguistic context itself. Typically, linguistic context is defined by relatively small units of language, such as a document within a corpus. However, recent research has demonstrated that larger definitions of context, some spanning tens or hundreds of thousands of words, provide a better accounting of lexical organization data (Johns, Dye, & Jones, 2020). This article attempts to redefine the notion of linguistic context by using socially based contextual measures, derived from the online communication patterns of hundreds of thousands of individuals from the discussion forum Reddit, consisting of over 55 billion words. Multiple count-based and semantic diversity models of contextual diversity were derived from this data. The results demonstrate that the communication patterns of individuals across discourses provides the best accounting of lexical organization data, indicating that classic notions of using local linguistic context to update a word's strength in the lexicon need to be reevaluated.

**Keywords:** lexical organisation, semantic diversity, big data, corpus studies, distributional semantics

6. Phillips, I. (2021). Blindsight is qualitatively degraded conscious vision. *Psychological Review*, 128(3), 558–584. <https://doi.org/10.1037/rev0000254>

**Abstract:** Blindsight is a neuropsychological condition defined by residual visual function following destruction of primary visual cortex. This residual visual function is almost universally held to include capacities for voluntary discrimination in the total absence of awareness. So conceived, blindsight has had an enormous impact on the scientific study of consciousness. It is held to reveal a dramatic disconnect between performance and awareness and used to motivate diverse claims concerning the neural and cognitive basis of consciousness. Here I argue that this orthodox understanding of blindsight is fundamentally mistaken. Drawing on models from signal detection theory in conjunction with a wide range of behavioral and first-person evidence, I contend that blindsight is severely and qualitatively degraded but nonetheless conscious vision,

unacknowledged due to conservative response biases. Psychophysical and functional arguments to the contrary are answered. A powerful positive case for the qualitatively degraded conscious vision hypothesis is then presented, detailing a set of distinctive predictions borne out by the data. Such data are further used to address the question of what it is like to have blindsight, as well as to explain the conservative and selectively unstable response criteria exhibited by blindsight subjects. On the view defended, blindsight does not reveal any dissociation between performance and awareness, nor does it speak to the neural or cognitive requirements for consciousness. A foundation stone of consciousness science requires radical reconsideration.

**Keywords:** blind sight, awareness, degraded conscious vision, signal detection theory, response criteria

7. Michel, M., & Lau, H. (2021). Is blindsight possible under signal detection theory? Comment on Phillips (2021). *Psychological Review*, 128(3), 585–591. <https://doi.org/10.1037/rev0000266>

**Abstract:** Phillips argues that blindsight is due to response criterion artifacts under degraded conscious vision. His view provides alternative explanations for some studies, but may not work well when one considers several key findings in conjunction. Empirically, not all criterion effects are decidedly no perceptual. Awareness is not completely abolished for some stimuli, in some patients. But in other cases, it is clearly impaired relative to the corresponding visual sensitivity. This relative dissociation is what makes blindsight so important and interesting.

**Keywords:** blind sight, signal detection theory, consciousness

8. Phillips, I. (2021). Bias and blindsight: A reply to Michel and Lau (2021). *Psychological Review*, 128(3), 592–595. <https://doi.org/10.1037/rev0000277>

**Abstract:** According to the textbooks, blindsight is a neuropsychological condition characterized by preserved capacities for voluntary visual discrimination unaccompanied by visual awareness. So construed, blindsight precipitated a revolution in theorizing consciousness. In Phillips (Psychological Review, 2021), I argued that the textbooks are wrong and the revolution ill-founded. Blindsight is exclusively a matter of conscious, albeit qualitatively degraded, vision which appears unconscious because of conservative response bias. Michel and Lau (Psychological Review, 2021) object: first, that residual awareness in blindsight cannot account for patients' impressive, feature-specific discriminatory abilities; and second, that performance matching makes response-bias explanations of unreported awareness implausible. They then offer a positive picture of blindsight as a specific deficit of detection, locating this idea within a framework which distinguishes perceptual from response bias. Here, I explain why neither objection convinces. I then argue that Michel and Lau give us no good reason to prefer their approach to our simpler, conscious-vision-only alternative.

**Keywords:** blind sight, awareness, signal detection theory, response bias, perceptual bias

## SCHOOL EFFECTIVENESS AND SCHOOL IMPROVEMENT

1. Shen, T., & Konstantopoulos, S. (2022). Are class size and teacher characteristics associated with cognitive outcomes in early grades? *School Effectiveness and School Improvement*, 33(3), 333–359. <https://doi.org/10.1080/09243453.2021.2023585>

**Abstract:** This study examines the associations between class size, teacher characteristics, and children’s academic achievement in mathematics, reading, and science using a recent, large-scale, longitudinal dataset. Individual fixed effects models, which control for observed and unobserved time-invariant student variables, were employed to conduct analysis of longitudinal data from the Early Childhood Longitudinal Study – Kindergarten in 2011 (ECLS-K:2011). Results suggest that reducing class size is associated with increases in reading and mathematics scores, but not in science scores. Non-linear class size effects were also detected and were more pronounced in reading achievement. Class size estimates were small in magnitude. A five-student decrease in class size corresponds to nearly a 0.01 standard deviation increase in mathematics and reading scores. None of the teacher characteristics were related to children’s cognitive outcomes. Finally, changing schools from grade to grade has a significant negative effect on children’s reading achievement.

**Keywords:** class size; teacher characteristics; student achievement; individual fixed effects; ECLS-K

2. Bijlsma, H. J. E., Glas, C. A. W., & Visscher, A. J. (2022). Factors related to differences in digitally measured student perceptions of teaching quality. *School Effectiveness and School Improvement*, 33(3), 360–380. <https://doi.org/10.1080/09243453.2021.2023584>

**Abstract:** Modern digital technologies enable the efficient collection and processing of student perceptions of teaching quality. However, students’ ratings could be confounded by student, teacher, and classroom characteristics. We investigated students’ ratings of 26 teachers who used the digital tool Impact! in their mathematics lessons with 14- and 15-year-old students ( $n = 717$ ). A Bayesian item response theory (IRT)-model approach was used to model potential associations. High-performing students on average rated their teacher higher than low- and middle-performing students. More likeable and more experienced teachers received higher ratings from their students, and the higher the class’s average math grade, the higher the students rated their teachers. Other variables investigated in this study (e.g., student and teacher gender, class size) were not associated with student perceptions of teaching quality. Both related and unrelated factors are discussed. Some implications of the findings for practice, limitations of the study, and suggestions for further research are presented.

**Keywords:** student perceptions; teaching quality, associated factors

3. Liu, Y., Li, L., & Huang, C. (2022). To what extent is shared instructional leadership related to teacher self-efficacy and student academic performance in China? *School Effectiveness and School Improvement*, 33(3), 381–402. <https://doi.org/10.1080/09243453.2022.2029746>

**Abstract:** Even though the concept has been introduced more than 2 decades ago, available evidence conventionally operationalises shared instructional leadership as a composite, which has missed the opportunity to reveal to what extent principal and teacher instructional leadership helps improve instructional outcomes. Using the complex survey data collected in China, this research employed a three-level structural equation model to investigate the multidimensional relationships among principal and teacher instructional leadership, teacher self-efficacy, and student learning outcomes. The results suggest principal instructional leadership is significantly related to teacher instructional leadership. Both are positively related to teacher self-efficacy and student performance, though the effect sizes vary noticeably. Using a survey design, this study has added international and nuanced evidence to the shared instructional leadership research, through an integrated model emphasising both principals' and teachers' leading roles.

**Keywords:** Shared instructional leadership; principal instructional leadership; teacher instructional leadership; teacher self-efficacy; student performance; international perspective

4. Kokkinou, E., & Kyriakides, L. (2022). Investigating differential teacher effectiveness: searching for the impact of classroom context factors. *School Effectiveness and School Improvement*, 33(3), 403–430. <https://doi.org/10.1080/09243453.2022.2030762>

**Abstract:** This study investigates differential effectiveness of teacher behaviour in relation to classroom composition by searching for the extent to which teachers exhibit the same teaching skills when they teach mathematics in different classrooms within a school year. Twenty-six teachers who taught mathematics in more than one classroom of the same age group of students participated in this study. Quality of teaching was measured through external observations and student questionnaires. Student achievement in mathematics at the beginning and at the end of the school year was measured. Data about each teacher factor of the dynamic model but orientation and dealing with student misbehaviour were generalizable at the teacher level. Multilevel structural equation modelling analysis revealed that all teacher factors had an effect on student achievement. Prior achievement (aggregated at classroom level) had an effect on the functioning of two factors (orientation and dealing with misbehaviour). Implications of findings are drawn.

**Keywords:** Educational effectiveness research; differential teacher effectiveness; quality of teaching; teacher evaluation; multilevel structural equation modeling

5. Leckie, G., & Prior, L. (2022). A comparison of value-added models for school accountability. *School Effectiveness and School Improvement*, 33(3), 431–455. <https://doi.org/10.1080/09243453.2022.2032763>

**Abstract:** School accountability systems increasingly hold schools to account for their performances using value-added models purporting to measure the effects of schools on student learning. The most common approach is to fit a linear regression of student current achievement on student prior achievement, where the school effects are the school means of the predicted residuals. In the literature, further adjustments are usually made for student sociodemographics and sometimes school composition and “non-malleable” characteristics. However, accountability systems typically make fewer adjustments: for transparency to end users, because data are unavailable or of insufficient quality, or for ideological reasons. There is therefore considerable interest in understanding the extent to which simpler models give similar school effects to more theoretically justified but complex models. We explore these issues via a case study and empirical analysis of England’s “Progress 8” secondary school accountability system.

**Keywords:** Value-added models; school accountability; school effects; school performance measures; Progress 8

6. Goffin, E., Janssen, R., & Vanhoof, J. (2022). The interplay of user beliefs and situated characteristics in explaining school performance feedback use. *School Effectiveness and School Improvement*, 33(3), 456–478. <https://doi.org/10.1080/09243453.2022.2041048>

**Abstract:** The present study explores predictors of school performance feedback (SPF) use. In total, 470 Flemish educational professionals were surveyed about their use of SPF from school-external, low-stakes standardized assessments. A path analysis was conducted in order to investigate how individual user beliefs impact SPF use at the school level and how those beliefs mediate the effects of school-level features pertaining to school organization, performance, and voluntariness. Findings include that users’ cognitive attitude and perceived expectations of others have a small effect on engagement with SPF in schools, and that these predictors mediate the effects of certain organizational characteristics. Whereas performance levels do not impact school-level feedback use, voluntariness in feedback pursuit and particularly an SPF-oriented school culture emerge as drivers. Implications for practice include the need for stimulating ownership in data-based decision making. Suggestions for further research are also discussed.

**Keywords:** School performance feedback; school improvement; data-based decision making; data culture; theory of planned behavior

7. Wang, F., Liu, Y., & Leung, S. O. (2022). Disciplinary climate, opportunity to learn, and mathematics achievement: an analysis using doubly latent multilevel structural equation modeling. *School Effectiveness and School Improvement*, 33(3), 479–496. <https://doi.org/10.1080/09243453.2022.2043393>

**Abstract:** Disciplinary climate and opportunity to learn (OTL) are considered as effectiveness-enhancing factors that can improve mathematics achievement. In this study, we investigated whether the school-level aggregation of student-reported OTL could yield reliable and valid measures, and then explored the relationships among disciplinary climate, OTL, and mathematics achievement at both school and student levels. Doubly latent multilevel structural equation modeling was adopted to analyze data from 63 countries/economies measured in the Programme for International Student Assessment (PISA) 2012. Three key findings emerged: (1) both disciplinary climate and OTL were reliable constructs when used at the school level, (2) disciplinary climate and OTL had positive effects on achievement at the school level, and OTL mediated the influence of disciplinary climate on achievement, and (3) OTL was positively associated with student achievement at the student level. Methodological and practical implications were discussed.

**Keywords:** Disciplinary climate; opportunity to learn; mathematics achievement; doubly latent multilevel structural equation modeling; PISA 2012

## THE QUARTERLY JOURNAL OF ECONOMICS

1. Mullainathan, S., & Obermeyer, Z. (2021b). Diagnosing Physician Error: A Machine Learning Approach to Low-Value Health Care. *The Quarterly Journal of Economics*, 137(2), 679–727. <https://doi.org/10.1093/qje/qjab046>

**Abstract:** We use machine learning as a tool to study decision making, focusing specifically on how physicians diagnose heart attack. An algorithmic model of a patient’s probability of heart attack allows us to identify cases where physicians’ testing decisions deviate from predicted risk. We then use actual health outcomes to evaluate whether those deviations represent mistakes or physicians’ superior knowledge. This approach reveals two inefficiencies. Physicians overtest: predictably low-risk patients are tested, but do not benefit. At the same time, physicians undertest: predictably high-risk patients are left untested, and then go on to suffer adverse health events including death. A natural experiment using shift-to-shift testing variation confirms these findings. Simultaneous over- and undertesting cannot easily be explained by incentives alone, and instead point to systematic errors in judgment. We provide suggestive evidence on the psychology underlying these errors. First, physicians use too simple a model of risk. Second, they overweight factors that are salient or representative of heart attack, such as chest pain. We argue health care models must incorporate physician error, and illustrate how policies focused solely on incentive problems can produce large inefficiencies.

2. Chan, D. C., Gentzkow, M., & Yu, C. (2022b). Selection with Variation in Diagnostic Skill: Evidence from Radiologists. *The Quarterly Journal of Economics*, 137(2), 729–783. <https://doi.org/10.1093/qje/qjab048>

**Abstract:** Physicians, judges, teachers, and agents in many other settings differ systematically in the decisions they make when faced with similar cases. Standard approaches to interpreting and exploiting such differences assume they arise solely from variation in preferences. We develop an alternative framework that allows variation in preferences and diagnostic skill and show that both dimensions may be partially identified in standard settings under quasi-random assignment. We apply this framework to study pneumonia diagnoses by radiologists. Diagnosis rates vary widely among radiologists, and descriptive evidence suggests that a large component of this variation is due to differences in diagnostic skill. Our estimated model suggests that radiologists view failing to diagnose a patient with pneumonia as more costly than incorrectly diagnosing one without, and that this leads less skilled radiologists to optimally choose lower diagnostic thresholds. Variation in skill can explain 39% of the variation in diagnostic decisions, and policies that improve skill perform better than uniform decision guidelines. Failing to account for skill variation can lead to highly misleading results in research designs that use agent assignments as instruments.

- Balboni, C., Bandiera, O., Burgess, R., Ghatak, M., & Heil, A. (2021b). Why Do People Stay Poor? *The Quarterly Journal of Economics*, 137(2), 785–844. <https://doi.org/10.1093/qje/qjab045>

**Abstract:** There are two broad views as to why people stay poor. One emphasizes differences in fundamentals, such as ability, talent, or motivation. The poverty traps view emphasizes differences in opportunities that stem from access to wealth. To test these views, we exploit a large-scale, randomized asset transfer and an 11-year panel of 6,000 households who begin in extreme poverty. The setting is rural Bangladesh, and the assets are cows. The data support the poverty traps view—we identify a threshold level of initial assets above which households accumulate assets, take on better occupations (from casual labor in agriculture or domestic services to running small livestock businesses), and grow out of poverty. The reverse happens for those below the threshold. Structural estimation of an occupational choice model reveals that almost all beneficiaries are misallocated in the work they do at baseline and that the gains arising from eliminating misallocation would far exceed the program costs. Our findings imply that large transfers, which create better jobs for the poor, are an effective means of getting people out of poverty traps and reducing global poverty.

- Michelman, V., Price, J., & Zimmerman, S. D. (2021b). Old Boys' Clubs and Upward Mobility Among the Educational Elite. *The Quarterly Journal of Economics*, 137(2), 845–909. <https://doi.org/10.1093/qje/qjab047>

**Abstract:** This article studies how exclusive social groups shape upward mobility and whether interactions between low- and high-status peers can integrate the top rungs of the economic and social ladders. Our setting is Harvard University in the 1920s and 1930s, where new groups of students arriving on campus encountered a social system centered on exclusive old boys' clubs. Combining archival and census records, we first show that students from prestigious private feeder schools are overrepresented in old boys' clubs, while academic high achievers and ethnic minorities are almost completely absent. Club members earn 32% more than other students and are more likely to work in finance and join country clubs, both characteristic of the era's elite. We use random variation in room assignment to show that exposure to high-status peers expands gaps in college club membership, adult social club membership, and finance careers by high school type, with large positive effects for private school students and zero or negative effects for others. To conclude, we turn to more recent cohorts. We show that the link between exclusive college clubs and finance careers persists across the twentieth century even as Harvard diversifies, and that elite university students from the highest-income families continue to outearn their peers.

- Aneja, A., & Xu, G. (2021b). The Costs of Employment Segregation: Evidence from the Federal Government Under Woodrow Wilson. *The Quarterly Journal of Economics*, 137(2), 911–958. <https://doi.org/10.1093/qje/qjab040>

**Abstract:** We link newly digitized personnel records of the U.S. government for 1907–1921 to census data to study the segregation of the civil service by race under President

Woodrow Wilson. Using a difference-in-differences design around Wilson's inauguration, we find that the introduction of employment segregation increased the black-white earnings gap by 3.4–6.9 percentage points. This increasing gap is driven by a reallocation of existing black civil servants to lower-paid positions, lowering their returns to education. Importantly, the negative effects extend beyond Wilson's presidency. Using census data for 1900–1940, we show that segregation caused a relative decline in the home ownership rate of black civil servants. Moreover, by comparing children of black and white civil servants in adulthood, we provide suggestive evidence that descendants of black civil servants who were exposed to Wilson's presidency exhibit lower levels of education, earnings, and social mobility. Our combined results thus document significant short- and long-run costs borne by minorities during a unique episode of state-sanctioned discrimination.

6. Lanzani, G. (2021). Correlation Made Simple: Applications to Saliency and Regret Theory. *The Quarterly Journal of Economics*, 137(2), 959–987. <https://doi.org/10.1093/qje/qjab041>

**Abstract:** I offer an axiomatization of risk models where the choices of the decision maker are correlation sensitive. By extending the techniques of conjoint measurement to the nondeterministic case, I show that transitivity is the von Neumann-Morgenstern axiom that has to be relaxed to allow for these richer patterns of behavior. To illustrate the advantages of the modeling choice, we provide a simple axiomatization for the saliency theory model in our general framework. This approach leads to clear comparison to popular preexisting models, such as regret and reference dependence, and allows one to single out the ordering property as the feature that brings saliency theory outside the prospect theory realm.

7. Alvarez, F., Lippi, F., & Oskolkov, A. (2021). The Macroeconomics of Sticky Prices with Generalized Hazard Functions. *The Quarterly Journal of Economics*, 137(2), 989–1038. <https://doi.org/10.1093/qje/qjab042>

**Abstract:** We give a full analytic characterization of a large class of sticky-price models where the firm's price-setting behavior is described by a generalized hazard function. Such a function allows for a vast variety of empirical hazards to be fitted. This setup is micro founded by random adjustment costs, as in Caballero and Engel (1999), or by information frictions, as in Woodford (2009). We establish two main results. First, we show how to identify all the primitives of the model, including the distribution of the fundamental adjustment costs and the implied generalized hazard function, using the distribution of price changes. Second, we derive a sufficient statistic for the aggregate effect of a monetary shock: given an arbitrary generalized hazard function, the cumulative impulse response of output to a once-and-for-all monetary shock is proportional to the ratio of the kurtosis of the steady-state distribution of price changes over the frequency of price adjustment. We prove that Calvo's model yields the upper bound and Golosov and Lucas's model the lower bound on this measure in the class of random menu cost models.

8. Angrist, J., Autor, D., & Pallais, A. (2021). Marginal Effects of Merit Aid for Low-Income Students. *The Quarterly Journal of Economics*, 137(2), 1039–1090. <https://doi.org/10.1093/qje/qjab050>

**Abstract:** Financial aid from the Susan Thompson Buffett Foundation (STBF) provides comprehensive support to a student population similar to that served by a host of state aid programs. In conjunction with STBF, we randomly assigned aid awards to thousands of Nebraska high school graduates from low-income, minority, and first-generation college households. Randomly assigned STBF awards boost bachelor's (BA) degree completion for students targeting four-year schools by about 8 points. Degree gains are concentrated among four-year college applicants who would otherwise have been unlikely to pursue a four-year program. Degree effects are mediated by award-induced increases in credits earned toward a BA in the first year of college. The extent of initial four-year college engagement explains differences in impact by target campus and across covariate subgroups. The projected lifetime earnings effect of awards exceeds marginal educational spending for all of the subgroups examined in the study. Projected earnings gains exceed funder costs for urban students and for students with relatively weak academic preparation.

9. Gumpert, A., Steimer, H., & Antoni, M. (2021). Firm Organization with Multiple Establishments. *The Quarterly Journal of Economics*, 137(2), 1091–1138. <https://doi.org/10.1093/qje/qjab049>

**Abstract:** We show theoretically and empirically that the managerial organization of multi-establishment firms is interdependent across establishments. To derive our result, we study the effect of geographic frictions on firm organization. In our model, we assume that a CEO's time is a resource in limited supply, shared across headquarters and establishments. Geographic frictions increase the costs of accessing the CEO. Hiring middle managers at one establishment substitutes for CEO time, which is reallocated across all establishments. Consequently, geographic frictions between the headquarters and one establishment affect the organization of all establishments of a firm. Our model is consistent with novel facts about multi-establishment firm organization that we document using administrative data from Germany. We exploit the opening of high-speed railway routes to show that not only the establishments directly affected by faster travel times but also the other establishments of the firm adjust their organization. Our findings imply that local conditions propagate across space through firm organization.

10. DellaVigna, S., Heining, J., Schmieder, J. F., & Trenkle, S. (2021). Evidence on Job Search Models from a Survey of Unemployed Workers in Germany. *The Quarterly Journal of Economics*, 137(2), 1181–1232. <https://doi.org/10.1093/qje/qjab039>

**Abstract:** The job-finding rate of unemployment insurance (UI) recipients declines in the initial months of unemployment and then exhibits a spike at the benefit exhaustion point. A range of theoretical explanations have been proposed, but those are hard to disentangle using data on job finding alone. To better understand the underlying mechanisms, we

conducted a large text-message-based survey of unemployed workers in Germany. We surveyed 6,349 UI recipients twice a week for four months about their job search effort. The panel structure allows us to observe how search effort evolves in individuals over the unemployment spell. We provide three key facts: (i) search effort is flat early on in the UI spell, (ii) search effort exhibits an increase up to UI exhaustion and a decrease thereafter, (iii) UI recipients do not appear to time job start dates to coincide with the UI exhaustion point. A standard search model with unobserved heterogeneity struggles to explain the second fact, and a model of storable offers is not consistent with the third fact. The patterns are well captured by a model of reference-dependent job search or by a model with duration dependence in search cost.

11. Acemoglu, D., De Feo, G., De Luca, G., & Russo, G. (2022). War, Socialism, and the Rise of Fascism: an Empirical Exploration. *The Quarterly Journal of Economics*, 137(2), 1233–1296. <https://doi.org/10.1093/qje/qjac001>

**Abstract:** The recent ascent of right-wing populist movements in several countries has rekindled interest in understanding the causes of the rise of fascism in the interwar years. In this article, we argue that there was a strong link between the surge of support for the Socialist Party after World War I and the subsequent emergence of fascism in Italy. We first develop a source of variation in socialist support across Italian municipalities in the 1919 election based on war casualties from the area. We show that these casualties are unrelated to a battery of political, economic, and social variables before the war and had a major effect on socialist support (partly because the socialists were the main antiwar political movement). Our main result is that this boost to socialist support (that is “exogenous” to the prior political leaning of the municipality) led to greater local fascist activity as measured by local party branches and fascist political violence, and to significantly larger vote share of the Fascist Party in the 1921 and 1924 elections. We provide evidence that landowner associations and greater presence of local elites played an important role in the rise of fascism. Finally, we find greater likelihood of Jewish deportations in 1943–45 and lower vote share for Christian Democrats after World War II in areas with greater early fascist activity.

## AUTHOR INDEX

S. No.	Author	Page No.
1.	Aalto, E.,	110
2.	Acemoglu, D.	157
3.	Alemdag, E	21
4.	Allasad Alhuzail, N	95
5.	Alm Fjellborg, A	88
6.	Al-Shaikh, A. R	25
7.	Alvarez, F	155
8.	Aneja, A.	156
9.	Anson, D. W	117
10.	Balboni, C.	154
11.	Bastos, R	123
12.	Baumann, S. D	69
13.	Bennett, R. E	37
14.	Bergdahl, N.	20
15.	Bhowmik, M. K	15
16.	Bijlsma, H. J. E	149
17.	Bisai, S	118
18.	Blanco, P. R.	136
19.	Brant, J	22
20.	Chan, D. C	153
21.	Chang, M.	6
22.	Charczenko, R., McMahon, M.,	5
23.	Cherbow, K	105
24.	Ciuhan, G. C	142
25.	Clarke, T	41
26.	Code, A.	9
27.	Consoli, A. J	96
28.	Coombs, A	32
29.	Cramer, C	126
30.	Dang, Lu	107
31.	Daniels, L. M	41
32.	Darokar, S. S	23
33.	DellaVigna, S	156
34.	Desai, C	23
35.	Dmitrašinović, V.,	1
36.	Eklund, C.	43
37.	Feng, T.	144
38.	Ferede, B	19
39.	Fermanis, P.	43
40.	Fincham, K	74
41.	Fischer, F	89
42.	Flores, J	26

43.	Gao, R.	33
44.	Gillespie, S.,	93
45.	Gone, J. P	99
46.	Gorman, T. E	17
47.	Graham, A.	14
48.	Guggemos, J.,	18
49.	Gumpert, A	156
50.	Hachmi, A.	135
51.	Haffenden, J.	44
52.	Hampton, R	24
53.	Hamzeh, M	22
54.	Heikkola, L. M	115
55.	Hellawell, B	9
56.	Heng, Z. S	8
57.	Hipkiss, A.,	10
58.	Hugo, E	116
59.	Isbell, D	108
60.	Jerrim, J	33
61.	Jia, Q., Luo, Y	2
62.	Johns, B. T.	147
63.	Junaid, M.,	26
64.	Jurkat, S	94
65.	Kaps, A	137
66.	Koblischka, M	130
67.	Kokkinou, E.	150
68.	Kovacs, P	146
69.	Kufel, D	1
70.	Kurum, G.	34
71.	Labrador, B	113
72.	Lanzani, G	155
73.	Layes, S., & Bouakkaz, T.	11
74.	Leckie, G	151
75.	Lee, C.	38
76.	Logan, G. D	145
77.	Lustick, H	100
78.	Ma, M., Li, M., Wang, Q	143
79.	McCandless, S	11
80.	McMaster, J. M	16
81.	Mendes, M	114
82.	Michel, M	148
83.	Moon, J. A	38
84.	Moya, A	129
85.	Mukund, B	140
86.	Mullainathan, S	153
87.	Nazare, J	19

88.	Ndihokubwayo, K	133
89.	Neel, M. S.	129
90.	Nezhad, M. P	138
91.	Øvereng, L. K. B	14
92.	Paquot, M	108
93.	Park, S	139
94.	Petrina, A	43
95.	Phillips, I	148
96.	Pilotti, M. A. E	141
97.	Pulkkinen, J	84
98.	Ramalingam, M.,	6
99.	Roberts, T	113
100.	Rodrigues, M	132
101.	Russell, M	36
102.	Santiago Ortiz, A	25
103.	Schneider, M. C	35
104.	Shen, T	149
105.	Shlyonsky, V.	1
106.	Sikström, P	18
107.	Skedsmo, G	32
108.	Slepkov, A. D.	3
109.	Slepkov, A. D.	3
110.	Spiecker, H	127
111.	Stolzenberger, C	131
112.	Stuckey, A	143
113.	Sullivan, M. C.	2
114.	Tanaka, K. S	128
115.	Thompson, F	134
116.	Thyssen, C.	7
117.	Tong, Y	35
118.	Topal, P	112
119.	Van Braak, M	118
120.	Viseu, S.	84
121.	Waddington, J.	15
122.	Wang, F	152
123.	Wang, J.,	8
124.	Wang, L. R.	1
125.	White, A. E	135
126.	Xiao, L., Bao, C	2
127.	Yamada, K	119
128.	Yannier, N	104
129.	Zakharia, Z	85
130.	Zhang, L	120
131.	Zheng, H.,	34

## TITLE INDEX

S.No.	Title	Page No.
1.	A comparison of value-added models for school accountability.	151
2.	A mixed-method study examining solutions to common barriers to teachers' adoption of evidence-based classroom practices.	142
3.	A reply to Michel and Lau (2021)	148
4.	A simple and low-cost experimental method to determine the thermal diffusivity of various types of foods.	1
5.	A simple setup for the determination of the cosmic muon magnetic moment.	3
6.	A whole school approach to building relationships, promoting positive behaviour and reducing teacher stress in a secondary school.	40
7.	<i>Agricultural Federalism : New Facts, Constitutional Vision.</i>	28
8.	Algorithms of adaptation in inductive inference	16
9.	Are class size and teacher characteristics associated with cognitive outcomes in early grades?	149
10.	Assessment of Rwandan physics students' active learning environments: classroom observations.	133
11.	Bioengineering, telecoupling, and alternative dairy: Agricultural land use futures in the Anthropocene.	57
12.	Blindsight is qualitatively degraded conscious vision.	147
13.	Children's discussions about texts: Integrating and evaluating practices.	118
14.	Climate impact or policy choice? The spatiotemporality of thermoregulation and border crosser mortality in southern Arizona.	59
15.	Coconstructing a Meaningful Online Environment: Faculty–Student Rapport in the English as a Foreign Language College Classroom.	37
16.	Constituting the norm: Interrogating the anthropocene through food geographies in the more-than-human worlds of western Avadh, India.	58
17.	Contesting settler colonial logics in Kashmir as pedagogical praxis	26
18.	Correlation Made Simple: Applications to Salience and Regret Theory.	155
19.	Cost-effective models for delivering behaviour analysis teaching in UK schools and local authorities.	11
20.	Critical reflexión and plática~testimonio/Haki shahadat: Enacting decolonial praxis of solidarity from the Mexico-US borders to Palestine.	22
21.	Design thinking as digital transformative pedagogy in higher sustainability education: Cases from Japan and Germany	80
22.	Development and validation of a social emotional skills scale: Evidence of its reliability and validity in China.	82
23.	Development of counterintuitive basic electric DC circuits test.	135

24.	Diagnosing Physician Error: A Machine Learning Approach to Low-Value Health Care.	153
25.	Disciplinary climate, opportunity to learn, and mathematics achievement: an analysis using doubly latent multilevel structural equation modeling.	152
26.	Does English proficiency support the economic development of non-English-speaking countries? The case of Asia.	71
27.	<i>Dynamics of Government Budgets, Growth, and Welfare.</i>	30
28.	Eastern European parents' experiences of parenting a child with SEN in England.	41
29.	Effectiveness of online regulation scaffolds on peer feedback provision and uptake: A mixed methods study	21
30.	Effects of different delivery modes on teaching biomedical science practical skills in higher education during the 2021 pandemic measures.	8
31.	Engagement and disengagement in online learning	20
32.	Essential workers' pandemic mobilities and the changing meanings of the commute.	61
33.	Evidence on Job Search Models from a Survey of Unemployed Workers in Germany	156
34.	Exam problems that link physical concepts with electrical phenomena in living cells.	1
35.	Examination of variables affecting peer attitudes towards children with disabilities: a cross-sectional study	50
36.	Expanding perspectives on secondary education teachers' learning ecosystems: implications for teachers' professional development	53
37.	Exploring student teachers' motivations and sources of confidence: the case of outdoor learning.	52
38.	Exploring the associations between student participation, wellbeing and recognition at school.	14
39.	<i>Factors associated with Chinese undergraduates' perceptions of the ethical issues in classroom assessment practices—a mixed methods study.</i> SpringerLink.	33
40.	<i>FDI, GDP and Regional Disparity : An Empirical Study to Cross-check.</i>	27
41.	<i>Federal Transfers and States' Own Spending on Development Activities.</i>	28
42.	Firm Organization with Multiple Establishments.	156
43.	Formal and Informal Supports for Women With Intellectual and Developmental Disabilities During Pregnancy.	68
44.	From atoms to stars: an interactive theatre play based on 'The Little Prince' novella to describe spatial thinking.	137
45.	<i>From Sairat to Jhund via Jai Bhim : Caste and the Culture Industry of.</i>	27
46.	From the shade into the sun: exploring pride and shame in students with special needs in Finnish VET	48

47.	Gendered Impacts of Increasing Land Sale in Western Maharashtra, India	67
48.	Governing plant-centred eating at the urban scale in the UK: The Sustainable Food Cities network and the reframing of dietary biopower.	57
49.	Grade retention and school entry age in Spain: a structural problem	33
50.	How did autistic children, and their parents, experience school transition during the Covid-19 pandemic?	9
51.	How Did the Post-9/11 GI Bill Affect Veteran Students' Undergraduate College Choices? An Application of Propensity Scores in Difference-in-Differences Models.	63
52.	How useful is post-graduate education in biochemistry for entry into the South African labour market?	4
53.	I Wouldn't Invite Them to the Cookout": How Black Male Special Education Teachers Feel About Socializing with Their White Colleagues	64
54.	Identification of motorcycle accidents hotspots in the Czech Republic and their conditional factors: The use of KDE + and two-step cluster analysis.	61
55.	Implicit professional identity: assessment and relation with explicit professional identity and well-being of pre-service teachers.	52
56.	In solidarity with Birzeit: The black, the white, and the gray	25
57.	<i>India's Turn to Save the World from the Next Crisis.</i>	27
58.	Interactions among school teachers, students and university researchers in workplace experiences using disused instruments of school laboratories.	124
59.	International student perceptions of online medical education during the COVID-19 epidemic.	8
60.	LacOp : A free web-based lac operon simulation that enhances student learning of gene regulation concepts.	5
61.	Latin American geography education research trends in open access journals from the twenty-first century.	88
62.	Learning to assess and evaluate complex realities.	32
63.	Limits of the simple pendulum formula for classroom use	129
64.	Making jets of air visible in the infrared.	122
65.	Mapping the constellation of assessment discourses: a scoping review study on assessment competence, literacy, capability, and identity	32
66.	Mapping the quality of teacher–pupil interactions in lessons with and without the use of tablets during a typical school day in first grade.	14
67.	Marginal Effects of Merit Aid for Low-Income Students.	156
68.	Mine closure, social disruption, and crime in South Africa.	58
69.	Moral imagination in student teachers' written stories on an ethical dilemma.	54

70.	Multimodality in the English language classroom: A systematic review of literature	116
71.	Multiple systems, multiple shadows: Diversity of supplementary tutoring received by private-school students in Dubai.	73
72.	NCME Presidential Address 2021: Assessment Research and Practice in the Post-COVID-19 Era	35
73.	<i>Needles, Blood, and Data : The Case of COVID-19 Vaccine Side Effects.</i>	29
74.	Newton’s law of cooling with a low-cost thermoscope: physics in the time of covid-19.	123
75.	Non-genetically modified organism in vitro CRISPR/Cas9 gene editing of the <i>lacZα</i> gene: A 4.5 h laboratory course for senior high-school students.	6
76.	Nonlinear coupling in an asymmetric pendulum.	2
77.	Old Boys’ Clubs and Upward Mobility Among the Educational Elite	154
78.	On an ethic of not going there	62
79.	On the nonlinearity of a tuning fork.	2
80.	Perihelion precession in power-law potentials: Hénon’s theorem.	1
81.	Precise measurements in mechanics using a moving light source and a smartphone.	130
82.	Predicting word and pseudoword reading in Arabic-speaking children: the independent contributions of phonological and morphological awareness and visual attention.	11
83.	Qualitative analysis of school children’s experience of receiving “Coping Cat program”: A cognitive behavioral therapy program for high anxiety.	140
84.	Quantitative measurement of birefringence in transparent films across the visible spectrum	3
85.	<i>Regulating Creditors : Addressing the Next Frontier of Corporate.</i>	29
86.	Reporting Pass–Fail Decisions to Examinees with Incomplete Data: A Commentary on Feinberg (2021).	39
87.	Research priority setting with parents of students with learning exceptionalities and disabilities	10
88.	Scaling Up a Peer-Mediated Program Statewide: Lessons Learned Through Peer to Peer.	70
89.	School-led mindset messaging: understanding elementary students’ meaning and emotions.	41
90.	Schoolwide critical restorative justice	100
91.	Seeking Out Social Learning: Online Self-Education in Parents of Children With Intellectual and Developmental Disabilities	69
92.	Selection with Variation in Diagnostic Skill: Evidence from Radiologists.	153
93.	Skier and loop-the-loop with friction.	1

94.	Skill requirements and remunerations in the private teacher labor market: Estimations with online advertisements in China	71
95.	Students' well-being and attitudes towards inclusion.	49
96.	Swap errors in visual working memory are fully explained by cue-feature variability	16
97.	Technology, Gender and Fishing in an Odisha Village.	66
98.	Technology-assisted coaching can increase engagement with learning technology at home and caregivers' awareness of it.	19
99.	The broiler chicken and the Anthropocene: Using critical nexus thinking to unpack the geographies of <i>Gallus gallus domesticus</i> .	56
100.	The Circle of Friends intervention: a research synthesis.	45
101.	The correspondence between PISA performance and school achievement in Finland.	84
102.	The Dalit curriculum from two perspectives.	23
103.	The episodic flanker effect: Memory retrieval as attention turned inward.	145
104.	<i>The Indian Time Use Survey 2019 : A Critique.</i>	30
105.	The Macroeconomics of Sticky Prices with Generalized Hazard Functions.	155
106.	The quality of outcome measure reporting in early numeracy intervention studies	139
107.	The Relationship between Item Developer Alignment of Items to Range Achievement-Level Descriptors and Item Difficulty: Implications for Validating Intended Score	35
108.	The transition from the biochemistry laboratory to home discovery during COVID-19.	7
109.	The use of stakeholder voice through school self-evaluation in Turkish schools	34
110.	To what extent is shared instructional leadership related to teacher self-efficacy and student academic performance in China?	150
111.	Training priorities in primary education bilingual programmes in Spain. <i>European</i>	51
112.	Transforming habitus and recalibrating capital: University students' experiences in online learning and communication during the COVID-19 pandemic.	120
113.	Translanguaging practices in the EFL classroom - the Polish context.	111
114.	Translation in <i>Love's Labour's Lost. Essays in Criticism</i>	43
115.	Undergraduate thesis supervisory conference: Academic discourse socialisation multiple-case study	119
116.	Understanding the experiences of school belonging amongst secondary school students with refugee backgrounds (UK)	40
117.	Urban wetlands, their dynamics and management strategies from the perspective of Environmental Geography	60

118.	Using a smartphone camera to explore ray optics beyond the thin lens equation.	2
119.	Using Activity Theory to explore the management of General Certificate of Education (GCSE) access arrangements.	10
120.	Using Classification Tree Models to Determine Course Placement.	38
121.	Vibrational spectroscopy in materials	134
122.	War, Socialism, and the Rise of Fascism: an Empirical Exploration.	157
123.	<i>What Does the COVID-19 Experience Tell Us about Indian Growth Drivers?</i>	31
124.	What was required above all else was collaboration': keeping the momentum for SEND partnership working in the wake of Covid-19.	9
125.	Why Do People Stay Poor?	154