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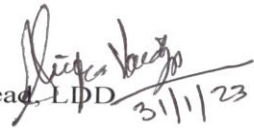
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The Library and Documentation Division (LDD) of NIE, NCERT is pleased to bring out **“Indexing & Abstracting Service of Periodicals”** for the month of **December, 2022**. This information product of LDD is the collection of Articles in the area of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

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Title Index

AMERICAN JOURNAL OF PHYSICS

1. Azevedo, T., & Pelluso, A. (2022). Space pirates: A pursuit curve problem involving retarded time. *American Journal of Physics*, 90(10), 730–735. <https://doi.org/10.1119/5.0069298>

Abstract: We revisit the classical pursuit curve problem solved by Pierre Bouguer in the 18th century, taking into account that information propagates at a finite speed. The discussion of this generalized problem of pursuit constitutes an excellent opportunity to introduce the concept of retarded time without the complications inherent to the study of electromagnetic radiation (where it is usually seen for the first time). We find the differential equation, which describes the problem, solve it numerically, compare the solution to Bouguer's for different values of the parameters, and deduce a necessary and sufficient condition for the pursuer to catch the pursued.

2. Jensen, S. (2022). Exploring entropy by counting microstates of the p -state paramagnet. *American Journal of Physics*, 90(10), 736–744. <https://doi.org/10.1119/5.0061383>

Abstract: Moore and Schroeder proposed an effective approach to introducing entropy and the second law through computational study of models with easily countable states at fixed energy. However, such systems are rare: the only familiar examples are the Einstein solid and the two-state paramagnet, which limits the available questions for assignment or discussion. This work considers the more general p -state paramagnet and describes the modestly more complicated counting of its microstates. An instructor can draw on this family of systems to assign a variety of new problems or open-ended projects that students can complete with the help of a spread sheet program or analytic calculation.

3. Robinson, M. (2022). Astronomy with Chaucer: Using an astrolabe to determine planetary orbits. *American Journal of Physics*, 90(10), 745–754. <https://doi.org/10.1119/5.0097302>

Abstract: Equipped with a home-made astrolabe and Kepler's laws, one can arrive at accurate estimates of the orbits of planets. Over the past three years, I have used an astrolabe to collect sightings of celestial bodies visible from my backyard. This paper shows that it is possible to measure one's latitude and longitude, the current time, locations of celestial bodies, and the sizes of the orbits of nearby planets. When the astrolabe is used to collect both daytime and night-time observations of Venus, one can also demonstrate that Venus orbits the Sun.

4. Siminovitch, D. J. (2022). Stereographic projection to and from the Bloch sphere: Visualizing solutions of the Bloch equations and the Bloch–Riccati equation. *American Journal of Physics*, 90(10), 755–762. <https://doi.org/10.1119/5.0088987>

Abstract: Stereographic projection mapping is typically introduced to explain the point at infinity in the complex plane. After this brief exposure in the context of complex analysis, students rarely get an opportunity to fully appreciate stereographic projection mapping as an elegant and powerful technique on its own with many fruitful applications in the physical sciences. Here, using a classical description of

nuclear magnetic resonance in the rotating frame, I show how stereographic projection mapping to and from the Bloch sphere can be used for visualizing solutions to Bloch's equation and the Bloch–Riccati equation, respectively. After developing the fundamentals of stereographic projection mapping using examples drawn from nuclear spin precession in the rotating frame, the method is then applied to visualizations of composite pulse excitation of a spin-1/2 system and to radiation damping in a system of isolated spins-1/2. In the case of the radiation-damped system, these visualizations provide particularly vivid illustrations of loxodromic Möbius transformation dynamics.

5. Herrera, W. J., Vinck-Posada, H., & Gómez Páez, S. (2022). Green's functions in quantum mechanics courses. *American Journal of Physics*, 90(10), 763–769. <https://doi.org/10.1119/5.0065733>

Abstract: The use of Green's functions is valuable when solving problems in electrodynamics, solid-state physics, and many-body physics. However, its role in quantum mechanics is often limited to the context of scattering by a central force. This work shows how Green's functions can be used in other examples in quantum mechanics courses. In particular, we introduce time-independent Green's functions and the Dyson equation to solve problems with an external potential. We calculate the reflection and transmission coefficients of scattering by a Dirac delta barrier and the energy levels and local density of states of the infinite square well potential.

6. Ohya, S. (2022). Efimov effect for two particles on a semi-infinite line. *American Journal of Physics*, 90(10), 770–777. <https://doi.org/10.1119/5.0086802>

Abstract: The Efimov effect (in a broad sense) refers to the onset of a geometric sequence of many-body bound states as a consequence of the breakdown of continuous scale invariance to discrete scale invariance. While originally discovered in three-body problems in three dimensions, the Efimov effect has now been known to appear in a wide spectrum of many-body problems in various dimensions. Here, we introduce a simple, exactly solvable toy model of two identical bosons in one dimension that exhibits the Efimov effect. We consider the situation where the bosons reside on a semi-infinite line and interact with each other through a pairwise δ -function potential with a particular position-dependent coupling strength that makes the system scale invariant. We show that, for sufficiently attractive interaction, the bosons are bound together, and a new energy scale emerges. This energy scale breaks continuous scale invariance to discrete scale invariance and leads to the onset of a geometric sequence of two-body bound states. We also study the two-body scattering off the boundary and derive the exact reflection amplitude that exhibits discrete scale invariance.

7. Hahn, K. T., & Gire, E. (2022). Waving arms around to teach quantum mechanics. *American Journal of Physics*, 90(10), 778–786. <https://doi.org/10.1119/5.0073946>

Abstract: Kinesthetic (or embodied) representations help students build intuition and deep understanding of concepts. This paper presents a series of kinesthetic activities for a spins-first undergraduate quantum mechanics course that supports students in reasoning and developing intuition about the complex-valued vectors of spin states. The arms representation, used in these activities, was developed as a tangible

representation of complex numbers: Students act as an Argand diagram, using their left arm to represent numbers in the complex plane. The arms representation is versatile and can be expanded to depict complex-valued vectors with groups of students. This expansion enables groups of students to represent quantum mechanical state vectors with their arms. We have developed activities using the arms representation that parallel the progression of a spins-first approach by starting with complex numbers, then representing two- and three-state systems, considering time-dependence, and, eventually, extending to approximate wave functions. Each activity illustrates the complex nature of quantum states and provides a tangible manipulative from which students can build intuition about quantum phenomena.

8. Roberti, V., Kalinic, B., Cesca, T., Bacci, L., & Peruzzi, G. (2022). Maxwell's color box: Retracing the path of color matching experiments. *American Journal of Physics*, 90(10), 787–794. <https://doi.org/10.1119/5.0087786>

Abstract: In his 1860 paper *On the theory of compound colours*, James Clerk Maxwell described an instrument used to obtain a direct comparison between daylight and a mixture of three selected spectral colors. This investigation was part of Maxwell's study of human color vision, color perception, and color representation, and it encompasses his main achievements in the field. The working principle underlying this device provided the basis from which color diagrams have been derived, beginning with the standard chromaticity diagram proposed by the International Commission on Illumination in 1931. We describe a reconstruction of Maxwell's original version of the color box. Constructing and analyzing data obtained with such a replica could serve as a semester project for advanced optics students.

9. Lindgren, R., Kozan, W., Fuerst, N., Knapp, D., & Veazey, J. P. (2022). A z-axis tunneling microscope for undergraduate labs. *American Journal of Physics*, 90(10), 795–800. <https://doi.org/10.1119/5.0094028>

Abstract: We present the design and construction of a laboratory apparatus that provides advanced undergraduates with hands-on observations of electron quantum tunneling and the electronic density of states of various materials. The instrument is inspired by the scanning tunneling microscope (STM), but its implementation is simplified by limiting the tip motion to the single dimension along the tip-sample separation (z -axis); we refer to the device as the z -axis tunneling microscope (ZTM). Students are able to use the ZTM to measure electron tunneling probability as a function of barrier width, estimate relative material work functions, and observe differences in local electronic structure among metals, semimetals, and semiconductors. We share results obtained by third-year undergraduate physics students using the instrument for their final projects in an advanced instructional lab course.

10. Gea-Banacloche, J. (2022). Causality, determinism, and physics. *American Journal of Physics*, 90(11), 809–816. <https://doi.org/10.1119/5.0087017>

Abstract: Although physical laws or theories are often invoked in debates over “causality” and “determinism,” our best current understanding of physics assigns only a limited (though still very broad) validity to these concepts. It may be, thus, helpful (particularly when having to deal with the challenges posed by quantum mechanics)

to think of them as prejudices, extrapolated from our experience with a limited (essentially classical) set of phenomena and/or theoretical models. This paper discusses how, over time, different physical theories have either reinforced or challenged these prejudices, focusing specifically on conservative “Laplacian” mechanics, dissipative mechanics (thermal physics), and quantum mechanics.

11. DiBari, G., Valle, L., Bua, R. T., Cunningham, L., Hort, E., Venenciano, T., & Hudgings, J. (2022). Using Hexbugs™ to model gas pressure and electrical conduction: A pandemic-inspired distance lab. *American Journal of Physics*, 90(11), 817–825. <https://doi.org/10.1119/5.0087142>

Abstract: We describe a pandemic-inspired, modern physics distance lab course, focused both on engaging undergraduate physics majors in scientific research from their homes and on building skills in scientific paper reading and writing. To introduce the experimental and analytic tools, students are first asked to complete a traditional lab assignment in which collections of Hexbugs™, randomly moving toy automatons, are used to model gas molecules and to confirm the ideal gas law. Subsequently, after consulting the literature, students propose and implement semester-long experiments using Hexbugs™, smartphones, and materials commonly found at home to model various concepts in statistical mechanics and electrical conduction. A sample project focused on the Drude model, in which Hexbugs™ on a tilted plane are used to model electrical conduction, is described in detail. Alongside the research projects, students write formal, peer-reviewed scientific papers on their work, modeling the professional publication process as closely as possible. Somewhat paradoxically, we found that the pandemic-inspired exigency of reliance on simple, home-built experiments enabled an increased focus on developing experimental research skills and achieving the laboratory learning objectives recommended by the American Association of Physics Teachers.

12. Poydenot, F., Abdourahamane, I., Caplain, E., Der, S., Jallon, A., Khoutami, I., Loucif, A., Marinov, E., & Andreotti, B. (2022). Turbulent dispersion of breath by the wind. *American Journal of Physics*, 90(11), 826–832. <https://doi.org/10.1119/5.0064826>

Abstract: The pioneering work of Taylor on the turbulent dispersion of aerosols is one century old and provides an interesting way to introduce both diffusive processes and turbulence at an undergraduate level. Low mass particles transported by a turbulent flow exhibit a Brownian-like motion over time scales larger than the velocity correlation time. Aerosols and gases are, therefore, subjected to an effective turbulent diffusion at large length scales. However, the case of a source of pollutant much smaller than the integral scale is not completely understood. Here, we present experimental results obtained by undergraduate students in the context of the COVID-19 pandemic. The dispersion of a fog of oil droplets by a turbulent flow is studied in a wind tunnel designed for pedagogical purposes. It shows a ballistic-like regime at short distance, followed by Taylor's diffusive-like regime, suggesting that scale-free diffusion by the turbulent cascade process is bypassed. Measurements show that the dispersion of CO₂ emitted when breathing in a natural, indoor air flow is not isotropic but rather along the flow axis. The transverse spread is ballistic-like, leading to the concentration decaying as the inverse-squared distance to the mouth. The experiment helps students understand the role of fluctuations in diffusive processes and in turbulence. A Langevin equation governing aerosol dispersion based on a single

correlation time allows us to model the airborne transmission risk of pathogens, indoors and outdoors. The results obtained in this study have been used to provide public health policy recommendations to prevent transmission in shopping malls.

13. Colcelli, A., Mussardo, G., Sierra, G., & Trombettoni, A. (2022). Free fall of a quantum many-body system. *American Journal of Physics*, 90(11), 833–840. <https://doi.org/10.1119/10.0013427>

Abstract: The quantum version of the free fall problem is a topic often skipped in undergraduate quantum mechanics courses, because its discussion usually requires wave packets built on the Airy functions—a difficult computation. Here, on the contrary, we show that the problem can be nicely simplified both for a single particle and for general many-body systems by making use of a gauge transformation that corresponds to a change of reference frame from the laboratory frame to the one comoving with the falling system. Using this approach, the quantum mechanics problem of a particle in an external gravitational potential reduces to a much simpler one where there is no longer any gravitational potential in the Schrödinger equation. It is instructive to see that the same procedure can be used for many-body systems subjected to an external gravitational potential and a two-body interparticle potential that is a function of the distance between the particles. This topic provides a helpful and pedagogical example of a quantum many-body system whose dynamics can be analytically described in simple terms.

14. Nikolić, H. (2022). Submarine paradox softened. *American Journal of Physics*, 90(11), 841–847. <https://doi.org/10.1119/5.0084185>

Abstract: In Supplee's submarine paradox, a naive argument based on Lorentz contraction leads to a contradiction that a fast submarine should sink in the water's reference frame but float in the submarine's reference frame. Due to the submarine's rigidity constraints, it is not easy to resolve the paradox in a manifestly covariant form. To simplify the problem, we consider a version of the paradox in which one fluid moves through another fluid. An analysis of ideal relativistic fluids in a weak gravitational field shows that the moving fluid has a larger pressure and, hence, sinks, in agreement with known results for the rigid submarine.

15. Rainey, R. C. T. (2022). Long-term changes in the Earth's climate: Milankovitch cycles as an exercise in classical mechanics. *American Journal of Physics*, 90(11), 848–856. <https://doi.org/10.1119/10.0013563>

Abstract: Long-term changes in the tilt of the Earth's axis, relative to the plane of its orbit, are of great significance to long-term climate change, because they control the size of the arctic and Antarctic circles. These “Milankovitch cycles” have hitherto been calculated by classical perturbation methods or by direct numerical integration of Newton's equations of motion. This paper presents an approximate calculation from simple considerations of angular momentum using similar methods to those used to study the precession of a spinning top. It is an instructive exercise in classical mechanics and gives a simple explanation of the phenomenon in terms of angular momentum. It is shown that the main component of “Milankovitch cycles” has a period of 41,000 yr and is due to one of the modes of precession of the Earth-Venus system. The other mode of this system produces a component of period 29,500 yr, and

a third component of period 54,000 yr results from the influence of the precession of the orbits of Jupiter and Saturn. These results agree closely with several of the numerical simulations in the literature and strongly suggest that some other results in the literature are incorrect.

16. Hall, M. J. W. (2022). Simple precession calculation for Mercury: A linearization approach. *American Journal of Physics*, 90(11), 857–860. <https://doi.org/10.1119/5.0098846>

Abstract: The additional perihelion precession of Mercury due to general relativity can be calculated by a method that is no more difficult than solving for the Newtonian orbit. This method relies on linearizing the relativistic orbit equation, is simpler than standard textbook methods, and is closely related to Newton's theorem on revolving orbits. The main result is accurate for all values of GM/c^2 for near-circular orbits.

17. Abdelhamid, A. A., Kerrigan, D., Koopman, W., Werner, A., Givens, Z., & Donev, E. U. (2022). Surface plasmon resonance sensing in the advanced physics laboratory. *American Journal of Physics*, 90(11), 865–880. <https://doi.org/10.1119/5.0070022>

Abstract: We present a set of experiments and computations suitable for introducing upper-level undergraduate physics and engineering students to the interdisciplinary field of nanoplasmonics for periods ranging from a week-long advanced laboratory session to a summer research project. The end product is a tunable optofluidic device capable of detecting changes in a fluid medium as low as 0.002 refractive index units. The sensing element—a thin gold film on a glass prism coupled to a microfluidic cell—owes its sensitivity to the bound nature of the surface plasmon–polariton waves that are resonantly excited by evanescently coupled light at the gold–fluid interface. Pedagogically, surface plasmon resonance (SPR) sensing immerses students in the rich physics of nanoscale optics and evanescent waves in constructing and operating a precision apparatus and in developing theoretical, analytical, and numerical models to aid both in the physical understanding and engineering optimization of the SPR sensor.

ACTION IN TEACHER EDUCATION

1. Capello, S. (2021). "I Wanted to Give Back to the Profession:" Preservice Teacher Supervision as Service Work. *Action in Teacher Education*, 44(1), 4–20. <https://doi.org/10.1080/01626620.2021.1935362>

Abstract: For decades, university supervisors of preservice teachers (PSTs) have been undervalued and ignored. Following neoliberal reforms, post-secondary institutions have outsourced PST supervision to contingent faculty, failed to provide professional development for supervisors, offered poor employment conditions, and overlooked PST supervision in tenure and promotion decisions. These actions, combined with the service orientation of teacher education, have framed PST supervision as service work. This case study sought to understand how supervisors and administrators in one teacher education department positioned supervisors' work as service and the influence of the institution and department on that positioning. Using a survey, interviews, and document analysis, this study found that supervisors positioned their work as professional, financial, and emotional service. In turn, the institution and teacher education department positioned supervisors' work as service by providing minimal compensation and no institutional rewards and expecting supervisors to enact roles that were not officially required of them. The study's implications are that teacher educators and higher education administrators should strive to recruit and retain a professional corps of supervisors, provide ongoing professional development to supervisors to assist in the professionalization of the role, and resist notions of supervision as service.

Keywords: University supervision, preservice teacher supervision, service, neoliberalism, teacher educator

2. Daly, A. (2021). Critical Conversations in Practice-Based Teacher Education: Fostering Equitable Teaching in a Yearlong Practicum. *Action in Teacher Education*, 44(1), 21–36. <https://doi.org/10.1080/01626620.2021.1959465>

Abstract: This study explores the use of critical conversations in a field-based practicum setting to develop dispositions toward, and understandings of, equitable teaching practices. To date, few studies have examined how mentors and mentees use shared reflection to examine issues of equity alongside learning how to teach. Using self-study methods and discourse analysis, I describe how two mentors and one preservice teacher engaged in five critical conversations across one school year. Critical conversations centered around how to design curriculum and use inclusive teaching practices to serve culturally, linguistically, and racially minoritized students in one fifth grade classroom. Findings indicate the participants used ten discursive strategies to initiate and sustain critical conversations, and issues of race surfaced new tensions that challenged the group's collaboration. Given the turn toward practice-based teacher education, this study offers insights into the ways mentors and mentees can use critical conversations to mediate field experiences and suggests the need for repurposing existing resources to prepare culturally relevant, antiracist, and equity-focused educators.

Keywords: Critical conversations, equitable teaching, practice-based teacher education

3. Pytash, K. E., & Hylton, R. (2021). Preservice Teachers' Self-efficacy During a Field Experience at a Juvenile Detention Facility. *Action in Teacher Education*, 44(1), 37–52. <https://doi.org/10.1080/01626620.2021.1936290>

Abstract: The purpose of this study was to explore preservice teachers' perceptions of self-efficacy during a field experience at a juvenile detention facility as they taught writing. A mixed-methods study was employed to investigate preservice teachers' perceptions of self-efficacy, their perceptions of students, and their writing instruction. Analysis revealed that self-efficacy scores had statistically significant increases. This data was supported by preservice teachers' perceptions of students and their writing instruction over the course of the field experience.

Keywords: Writing, juvenile detention facility, preservice teachers, field experience, self-efficacy

4. Beck, B. (2021). Testimonial Injustice and Teacher Education. *Action in Teacher Education*, 44(1), 53–69. <https://doi.org/10.1080/01626620.2021.1932639>

Abstract: This narrative inquiry explores the experiences of LGBTQ+ teacher candidates of color in a teacher education program. Composed of vignettes written by teacher candidates and narrative analysis to frame the significance of and contexts within which the vignettes were written, this study first offers insight into the ways teacher candidates understand their own intersecting identities, with specific attention given to how events within and outside the walls of the teacher education program shaped these understandings. The faculty response to the teacher candidates' vignettes is then shared, revealing how the perceived credibility of the teacher candidates' vignettes by teacher education faculty limited or expanded the teacher candidates' ability to engage their intersecting identities in the work of teaching and learning.

Keywords: Teacher education, intersectionality, testimonial injustice

5. Gokalp, G., & Can, I. (2021). Evolution of Pre-service Teachers' Perceptions about Classroom Management and Student Misbehavior in an Inquiry-based Classroom Management Course. *Action in Teacher Education*, 44(1), 70–84. <https://doi.org/10.1080/01626620.2021.1939194>

Abstract: This study investigated how pre-service teachers' perceptions about classroom management and student misbehavior evolved in an inquiry-based classroom management course. Twenty-four pre-service teachers in Northern Cyprus participated in the study. Data were collected through writing prompts. The results showed that most of the pre-service teachers regarded the major goal of classroom management as establishing discipline in the classroom through deploying reactive disciplinary strategies prior to taking the course. Their conceptualization of classroom management changed, and they mostly started to include proactive strategies to create a learning environment fostering meaningful learning and enhancing students' social and emotional development. Their approach to student misbehavior became more nuanced and informed with more elaboration in terms of a) the context in which it would appear, (b) its frequency of happening, (c) its severity, and (d) its possible effects on students, wider audience, and teaching-learning processes.

Keywords: Classroom management plan, inquiry-based classroom management, proactive classroom management, pre-service teachers

6. Endo, R. (2022). Beyond “Good-Faith” Efforts: Diversifying the Faculty Ranks in Teacher Education through Equity-Conscious Recruitment Practices. *Action in Teacher Education*, 44(3), 181–195. <https://doi.org/10.1080/01626620.2022.2058641>

Abstract: This autoethnographic cross-case study articulates a set of field-tested strategies, focusing on how White-dominated teacher-preparation programs (TPPs) could recruit a greater number of teacher educators who are Black, Indigenous, and People of Color (BIPOC) by actively designing, implementing, and modeling equity-conscious recruitment practices. The conceptual framework describes the instrumental value that BIPOC teacher educators bring to Predominantly White Institutions (PWIs) by drawing on a sociocultural assets-based view of racially diverse professionals in historically White settings. Methods involved a directed approach to content analysis of 50 search-related documents across 10 faculty searches that the author facilitated between the years 2009–2018 that led to all-BIPOC hires. The findings focus on three major milestones during a typical faculty search with an emphasis on the contexts of TPPs: (a) planning for equitable and inclusive practices from start to finish through a model of shared accountability, (b) encouraging search committees to actively engage in innovative approaches to recruitment, including traditional and non-traditional strategies, and (c) supporting stakeholders, such as committee members and voting faculty who have direct or indirect decision-making power in faculty searches, in reducing cognitive errors throughout the evaluation and selection process. Implications are offered for practice and theory.

Keywords: Diversity in teacher education, equity-conscious recruitment practices, faculty diversity

7. Colonnese, M. W., Reinke, L. T., & Polly, D. (2022). An Analysis of the Questions Elementary Education Teacher Candidates Pose to Elicit Mathematical Thinking. *Action in Teacher Education*, 44(3), 196–211. <https://doi.org/10.1080/01626620.2021.2020696>

Abstract: This paper describes the findings of a study that examined the questions elementary education teacher candidates (TCs) posed while facilitating a number talk or a discussion about a word problem with elementary school students. The TCs in this study were undergraduates participating in a practice-based mathematics pedagogy/methods course designed to provide multiple experiences unpacking, planning, and rehearsing pedagogies focused on eliciting students’ mathematical thinking. Recordings of the TCs facilitating a discussion were analyzed using two different frameworks: question types from the National Council of Teachers of Mathematics (NCTM) Principles to Action and components of eliciting students’ thinking. Findings indicate varied levels of questions across participants, but showed that some TCs were able to pose question types aimed at effectively eliciting students’ mathematical thinking. Implications for future studies include further examination about how to increase TCs’ enactment of effective questions in classrooms after practice-based teacher education activities.

Keywords: Eliciting mathematical thinking, questioning, practice-based teacher education, teacher candidates

8. Wrenn, M., & Stanley, J. (2021). Supporting Elementary Pre-Service Teachers' Academic Language Development in Social Studies. *Action in Teacher Education*, 44(3), 212–229. <https://doi.org/10.1080/01626620.2021.1987352>

Abstract: In this action research study, we investigated pre-service teachers' (n = 39) perceptions of academic language and strategies in order to support their abilities to plan and teach elementary social studies. Using mixed methods triangulation design, we analyzed edTPA SCORES, pre-assessments, post-assessments, videos of teaching, field notes, self-reflections, and other artifacts. Data analysis occurred in two phases. In Phase 1, we analyzed the success of each action research cycle and determined how to adjust instruction. In Phase 2, we conducted retrospective analysis that began with structural coding of the assessments and included a constant comparative analysis of the themes against quantitative data. Results indicate that as participants developed increased meta-language, became critically aware of their own strengths and weaknesses in planning and modeling academic language, and broadened their definitions of academic language. Additionally, we identified several strategies that supported participants' growth for each theme.

Keywords: Preservice teachers, action research, disciplinary literacy academic language, social studies methods

9. Gahlsdorf Terrell, D., & Sherman, D. (2022). Mirror of Mind: Eliciting Critical Reflections in Preservice and Novice Teachers. *Action in Teacher Education*, 44(3), 230–251. <https://doi.org/10.1080/01626620.2022.2036268>

Abstract: This qualitative case study responds to calls for research on the ways critical reflection develops in preservice and novice teachers. While evaluating capacity to reflect is a dominant practice in teacher education, few studies explore empirically how different factors impact teachers' reflection. Building from earlier research that conceptualized a typology that included four levels of reflective thinking, this study explores how different factors spur the highest form of reflection identified by the literature, critical reflection, through a multi-method approach involving several sets of data across nine cases of learning to teach. Findings from within-case analyses suggest some habits of critical reflection transfer across contexts, while others appear to be contextually dependent. Shifts in teaching contexts and elicitation practices appear to drive the quality and quantity of critical reflection suggesting that some habits of reflection can be elicited and reinforced by teacher educators regardless of context.

Keywords: Critical reflection, teacher education, cognitive dissonance, dialog partners, Preservice teachers, novice teachers, elicitation

10. Ressler, M. B., Apantenco, C., Wexler, L., & King, K. (2022). Preservice Teachers' Mental Health: Using Student Voice to Inform Pedagogical, Programmatic, and Curricular Change. *Action in Teacher Education*, 44(3), 252–268. <https://doi.org/10.1080/01626620.2021.1997832>

Abstract: The purpose of the study is to analyze the role preservice teachers' mental health plays in their development during teacher preparation programs and the role of teacher preparation programs in preservice teachers' mental health journeys. Using an

ethic of care theoretical approach, a within-method triangulation design was utilized with interviews, focus groups, and surveys in a qualitative study with 33 participants in order to more fully understand student participant perspectives. The major findings included the need to better normalize mental healthcare, the demand preservice teachers face preparing for a helping profession, and the importance of providing an environment in which care and self-care can be better developed.

Keywords: Mental health, Preservice teachers, ethic of care, teacher preparation, student voice

11. Tovey, S. (2022). Engaging the Reluctant Preservice Teacher Reader: Exploring Possible Selves with Literature Featuring Teachers. *Action in Teacher Education*, 44(4), 271–289. <https://doi.org/10.1080/01626620.2022.2060878>

Abstract: Teachers’ literacy identities inform how they teach reading. Only about half, however, view themselves as enthusiastic readers, and up to 40% have negative attitudes toward reading. The repercussions are great: not only do teachers who are unenthusiastic about reading produce uninspired students, but they also use fewer research-based reading strategies. Rooted in Storyworld Possible Selves (SPS) theory, the purpose of this study was to explore how and in what ways preservice teachers, identified as reluctant readers, might improve their attitudes and visions of themselves as reading teachers as a result of reading, reflecting upon, and engaging in discussion around fictional and autobiographic literature that featured teachers. Findings indicated that these experiences did seem to improve general attitudes toward reading, and resulted in a deeper understanding of themselves as readers and reading teachers. The study presents implications for teacher educators and provides delineation and a coding scheme for analyzing transformational responses to literature.

Keywords: Reading attitudes, reading motivation, preservice teachers, reader response, Storyworld Possible Selves theory

12. Briceño, A., & Rodriguez-Mojica, C. (2022). “It Made Me See What Kind of Teacher I Want to Be:” Critical Literacy in a Pre-service Literacy Methods Course. *Action in Teacher Education*, 44(4), 290–307. <https://doi.org/10.1080/01626620.2022.2108162>

Abstract: Drawing on critical literacy as a theoretical framework, this paper explores how a children’s book writing assignment designed to center the experiences of underrepresented communities in children’s literature contributed to shifts in awareness among predominantly White teacher candidates. The study occurred at a large urban university in California and included 77 participants who all participated in a required Literacy Methods course in a teacher preparation program. Teacher candidate surveys and critical content analysis of candidate-authored books revealed that candidates: (1) selected topics to write about because they had a personal connection to the issue or because of its relevance to their students; (2) created books that evidenced their ability to apply traditional literacy concepts through a critical lens, (3) evidenced a deepened understanding of representation and diversity in children’s literature. Findings highlight the importance of critical literacy experiences in teacher preparation as a way to develop teacher candidates’ critical lens. Implications include the importance of integrating critical literacy with traditional literacy content – it is not something “extra;” the need for a critical perspective to be

an integral part of Teacher Performance Expectations and standards; and the need for on-going professional development for both teachers and teacher educators.

Keywords: Pre-service teachers preparation, literacy, diverse texts

13. Rutten, L., Doyle, S. L., Wolkenhauer, R., & Schussler, D. L. (2022). Teacher Candidates' Perceptions of Emergent Teacher Leadership in Clinically Based Teacher Education. *Action in Teacher Education*, 44(4), 308–329. <https://doi.org/10.1080/01626620.2022.2074912>

Abstract: *Emergent teacher leadership* is a new concept that refers to teacher leadership in its earliest forms among teachers at any point in their careers but particularly among teacher candidates and early-career teachers. This qualitative study used semi-structured interviews to investigate how six teacher candidates perceived their own emergent teacher leadership as they completed yearlong clinical internships in a professional development school (PDS) in which teacher educators had established teacher leadership development as a formalized expectation for all teacher candidates. Thematic analysis of the interview transcripts revealed that although the teacher candidates maintained aspirations for future teacher leadership, they struggled throughout their internships with feelings of illegitimacy as teacher leaders and with skepticism toward the PDS's expectations for teacher leadership – even as they gradually began to describe their engagement in leadership practices throughout the PDS. Teacher candidates reported leading when they were included within PDS decision-making processes and when they created their own leadership opportunities by taking the initiative and by gathering others to share ideas and to learn together through practitioner inquiry. The findings suggest that teacher educators could promote emergent teacher leadership by assisting teacher candidates in connecting the practices of practitioner inquiry with leadership opportunities and practices.

Keywords: Practitioner inquiry, preservice teacher education, teacher leaders, teacher leadership, professional development schools

14. Booker, K. C. (2022). Preservice Teachers and the Notion of Care: An Analysis of Classroom Management Plans. *Action in Teacher Education*, 44(4), 330–343. <https://doi.org/10.1080/01626620.2022.2096710>

Abstract: Teachers leave the profession due to many reasons, one of which is difficulty with classroom management skills. A significant part of a well-run classroom is having affirming and positive relationships with students. In this study, teacher caring is explored via a content analysis of preservice teachers' classroom management plans, a required component of their education preparation program. Findings revealed three themes: *Remembering Their ABC's*; *Keeping Culture Close and Peers Always Present*; and *Everyday Expectations Equal Engagement*. Implications for teacher educators are presented with a summary of ways to encourage relational caring and bonding in the secondary classroom.

Keywords: Secondary teachers, teacher caring, interpersonal classroom relationships, engagement

15. Ijebor, E. E., Cascalheira, C. J., & Lucero, L. (2022). Using Field Trips to Create Relevant Social Justice Informed Mathematics Lessons in an Elementary Teacher Education Program: An Action Research Study. *Action in Teacher Education*, 44(4), 344–362. <https://doi.org/10.1080/01626620.2022.2096709>

Abstract: Teaching mathematics for social justice is a rich research area in which field trips have been under examined. The paucity of literature on math-based field trips for social justice, specifically, warrants further investigation. This action research study aims to improve our practice of empowering elementary preservice teachers to design math-based field trips to enhance student awareness of social justice issues. Two research questions (RQ) guided this project: (RQ1) How can teacher educators inspire social change within math education via the preparation of future elementary teachers using math-based field trips? (RQ2) What are preservice teachers’ perceptions of designing socially just math lessons using fieldtrips? We provide an overview of previous literature, describe the project we designed, and provide an analysis of preservice teachers’ experiences and perceptions of this project. Thematic analysis of student journals and final assignments generated eight overarching themes and three subordinate themes organized by three phases. Organization by phases indicates a structural approach that teacher educators may use when introducing a similar activity. Further analysis revealed elementary preservice teachers emphasized the beneficial challenge of this assignment, suggesting that math-based social justice field trips are important additions to teacher education programs. Finally, we discuss what we learned from this study as teacher educators and researchers and provide recommendations to the field of teacher education.

Keywords: Social justice, mathematics education, teacher preparation, field trips, elementary teacher education, action research

APPLIED MEASUREMENT IN EDUCATION

1. Abulela, M. A. A., & Rios, J. A. (2022). Comparing the Robustness of Three Nonparametric DIF Procedures to Differential Rapid Guessing. *Applied Measurement in Education*, 35(2), 81–94. <https://doi.org/10.1080/08957347.2022.2067542>

Abstract: When there are no personal consequences associated with test performance for examinees, rapid guessing (RG) is a concern and can differ between subgroups. To date, the impact of differential RG on item-level measurement invariance has received minimal attention. To that end, a simulation study was conducted to examine the robustness of the Mantel-Haenszel (MH), standardization index (STD), and logistic regression (LR) differential item functioning (DIF) procedures to type I error in the presence of differential RG. Sample size, test difficulty, group impact, and differential RG rates were manipulated. Findings revealed that the LR procedure was completely robust to type I errors, while slightly elevated false positive rates (< 1%) were observed for the MH and STD procedures. An applied analysis examining data from the Programme for International Student Assessment showed minimal differences in DIF classifications when comparing data in which RG responses were unfiltered and filtered. These results suggest that large rates of differences in RG rates between subgroups are unassociated with false positive classifications of DIF.

2. Song, Y. A., & Lee, W. C. (2022). Effects of Using Double Ratings as Item Scores on IRT Proficiency Estimation. *Applied Measurement in Education*, 35(2), 95–115. <https://doi.org/10.1080/08957347.2022.2067543>

Abstract: This article presents the performance of item response theory (IRT) models when double ratings are used as item scores over single ratings when rater effects are present. Study 1 examined the influence of the number of ratings on the accuracy of proficiency estimation in the generalized partial credit model (GPCM). Study 2 compared the accuracy of proficiency estimation of two IRT models (GPCM versus the hierarchical rater model, HRM) for double ratings. The main findings were as follows: (a) rater effects substantially reduced the accuracy of IRT proficiency estimation; (b) double ratings relieved the negative impact of rater effects on proficiency estimation and improved the accuracy relative to single ratings; (c) IRT estimators showed different patterns in the conditional accuracy; (d) as more items and a larger number of score categories were used, the accuracy of proficiency estimation improved; and (e) the HRM consistently showed better performance than the GPCM.

3. Silva Diaz, J. A., Köhler, C., & Hartig, J. (2022). Performance of Infit and Outfit Confidence Intervals Calculated via Parametric Bootstrapping. *Applied Measurement in Education*, 35(2), 116–132. <https://doi.org/10.1080/08957347.2022.2067540>

Abstract: Testing item fit is central in item response theory (IRT) modeling, since a good fit is necessary to draw valid inferences from estimated model parameters. *Infit* and *outfit* fit statistics, widespread indices for detecting deviations from the Rasch model, are affected by data factors, such as sample size. Consequently, the traditional use of fixed infit and outfit cutoff points is an ineffective practice. This article evaluates if confidence intervals estimated via parametric bootstrapping provide more suitable cutoff points than the conventionally applied

range of 0.8–1.2, and outfit critical ranges adjusted by sample size. The performance is evaluated under different sizes of misfit, sample sizes, and number of items. Results show that the confidence intervals performed better in terms of power, but had inflated type-I error rates, which resulted from mean square values pushed below unity in the large size of misfit conditions. However, when performing a one-side test with the upper range of the confidence intervals, the forementioned inflation was fixed.

4. Lions, S., Monsalve, C., Dartnell, P., Blanco, M. P., Ortega, G., & Lemarié, J. (2022). Does the Response Options Placement Provide Clues to the Correct Answers in Multiple-choice Tests? A Systematic Review. *Applied Measurement in Education*, 35(2), 133–152. <https://doi.org/10.1080/08957347.2022.2067539>

Abstract: Multiple-choice tests are widely used in education, often for high-stakes assessment purposes. Consequently, these tests should be constructed following the highest standards. Many efforts have been undertaken to advance item-writing guidelines intended to improve tests. One important issue is the unwanted effects of the options' position on test outcomes. Any possible effects should be controlled through an adequate response options placement strategy. However, literature is not straightforward about how test developers arrange options. Therefore, this research synthesis systematically reviewed studies examining adherence to options placement guidelines. Relevant item features, such as the item source (standardized or teacher-made tests) and the number of options were considered. Results show that answer keys' distribution across tests is often biased, which might provide examinees with clues to select correct options. Findings also show that options are not always arranged in a "logical" fashion (numerically, alphabetically...) despite being suited to be so arranged. The reasons underlying non-adherence to options placement guidelines are discussed, as is the appropriateness of observed response options placement strategies. Suggestions are provided to help developers better arrange items options.

5. Jonson, J. L. (2022). Guiding Educators' Evaluation of the Measurement Quality of Social and Emotional Learning (SEL) Assessments. *Applied Measurement in Education*, 35(2), 153–177. <https://doi.org/10.1080/08957347.2022.2067541>

Abstract: This article describes a grant project that generated a technical guide for PK-12 educators who are utilizing social and emotional learning (SEL) assessments for educational improvement purposes. The guide was developed over a two-year period with funding from the Spencer Foundation. The result was the collective contribution of a widely representative group of scholars and practitioners whose background and expertise provided a multifaceted view of important considerations when evaluating the measurement quality of an SEL assessment. The intent of the guide is to enable PK-12 educators to make more informed decisions when identifying, evaluating, and using valid, reliable, and fair SEL assessments for the purposes of curricular and program improvements. The efforts can also serve as an example of how to contextualize professional standards for testing practice that support the selection and use of tests by non-measurement audiences.

BRITISH JOURNAL OF SPECIAL EDUCATION

1. Bukamal, H. (2022). Deconstructing insider–outsider researcher positionality. *British Journal of Special Education*, 49(3), 327–349. <https://doi.org/10.1111/1467-8578.12426>

Abstract: Reflexivity involves the researcher's attentiveness to cultural aspects of the research context. In this article, I deconstruct scenarios from a reflexive diary and interpret how these scenarios respond to an insider–outsider positionality that is determined by my cultural identity, profession, gender and educational background. I examine reflexive dialogue as pertaining to several factors: the influence of my background on the research topic; the changing nature of positionality in different cultural locations; methodological decisions that are based on my positionality and the research context; preparation to conduct fieldwork in two distinct cultural contexts; and ways to establish rapport, approachability and cultural credibility. I conclude by acknowledging the value of reflexive practice, and by determining my ambivalent insider–outsider positionality in different cultural locations.

Keywords: Reflexivity, insider-outsider, positionality, inclusive practice, comparative education

2. Lindley-Baker, J., & Mills, L. (2022). Playing to learn: Learning to TALK. *British Journal of Special Education*, 49(3), 350–374. <https://doi.org/10.1111/1467-8578.12411>

Abstract: *We love the fact she can learn through play, because she is learning but not realizing, and she does not feel pressurized to learn* (parent of a child with neurodiverse developmental disorders [NDD]). Engaging children with NDD in meaningful learning can be challenging, and that challenge is exacerbated when children are neither motivated nor equipped with the skills to facilitate engagement. Communication barriers hinder learning, and children with NDD need extra support to develop language skills. This action research promoted communication competence through structured interventions, consolidated via play. The findings confirmed that progression in spontaneous communication and interaction interrelates with creative play. An innovative structured teaching approach, including video-modeling, was devised and named total augmented language and key skills (TALKS). This research affirms that changing the learning environment by employing an integrated teaching model involving connectivity and adopting TALKS. enhances a whole-school approach to communication competence for children with NDD.

Keywords: neurodiverse development disorders, communication competence, play, action research

3. Vostanis, A., Padden, C., & Langdon, P. E. (2022). Investigating the relationship between learning channel sets during the mathematical practice of autistic students. *British Journal of Special Education*, 49(3), 375–398. <https://doi.org/10.1111/1467-8578.12408>

Abstract: Learning channels refer to the way students receive instruction and respond to it. We examined the relationship between See-Say and See-Write learning channel

sets during the mathematical practice of four male autistic students, aged 8 to 14 years. Participants received practice in the $\times 7$ and $\times 8$ tables across both channel sets. Lessons included untimed practice, timed practice, graphing and goal-setting. A multiple treatments design, embedded in a multiple baseline across participants design, was used. When practice on a set was completed, an assessment of endurance, stability, application, generalisation to the other set and maintenance was conducted. Practice led to improvements that were maintained. Participants achieved learning rates above 30% per week, which is a minimum expectation in Precision Teaching. Practice on one set affected performance on the other, and the order of practice was an important variable. The See-Say channel set led to better generalisation outcomes while performance was stronger on the See-Write.

Keywords: standard celebration chart, special education, precision teaching, RESA, fluency

4. Beck, S. (2022). Evaluating the use of reasonable adjustment plans for students with a specific learning difficulty. *British Journal of Special Education*, 49(3), 399–419. <https://doi.org/10.1111/1467-8578.12412>

Abstract: Despite calls for a move away from individual adjustments toward a fully inclusive design for learning, the practice of applying institutional reasonable adjustments for disabled students persists in UK higher education. Previous research suggests, however, that these adjustments are often generic and do not appropriately address individual students' learning needs. If the practice is to continue, therefore, it is incumbent on higher education institutions to ensure current policies and procedures are fit for purpose and lead to increased accessibility for disabled students. This article presents a small-scale developmental evaluation of Reasonable Adjustment Plans (RAPs) for students with specific learning differences at one large, post-92 institution. Findings from 16 interviews indicate that despite some positive feedback, RAPs are not always well received by students and do not always lead to enhanced inclusion. A number of changes are recommended for practice, including stream-lining existing processes, implementing a RAP review and focusing on relationships with faculty staff.

Keywords: reasonable adjustments, higher education, specific learning difficulty

5. Katsarou, D., & Andreou, G. (2022). Phonological patterns in Greek language in toddlers and children with Down syndrome and children with language impairment. *British Journal of Special Education*, 49(3), 420–437. <https://doi.org/10.1111/1467-8578.12410>

Abstract: Down syndrome is a genetic disorder which is represented by a variety of deficits in all linguistic domains including phonology. Previous research, mainly conducted in the English language, has documented phonological deficits in early childhood in Down syndrome. Given the paucity of research in the area of phonology in the Greek language, the aim of the present study was to evaluate the phonological skills of children with Down syndrome (N = 45) in the Greek language and compare them with those of age-matched and non-verbal age children with language impairment (N = 45). A test, standardized in the Greek language, was used for the above purpose which consisted of four subscales: articulation; phonemic analysis;

phonemic completion; and phonemic distinction. The results showed that children with Down syndrome performed poorer on all four subscales than children with language impairment, and provided evidence for distinct difficulties in specific consonants and complex articulations inherent in the Greek language.

Keywords: Down syndrome, Greek Language, Linguistics, phonology, toddlers

6. Harnek Kegan, D. M., Vejar, C. M., & Martinelli Beasley, L. A. (2022). Perspectives of college students' attitudes and knowledge about people with disabilities. *British Journal of Special Education*, 49(3), 438–462. <https://doi.org/10.1111/1467-8578.12415>

Abstract: Although there is a growing presence of college students with disabilities, there are still a number of barriers that need to be addressed. College campuses provide an arena to challenge students' worldviews and bring awareness of challenges to marginalized populations. The present study is an evaluation of a disability awareness workshop for college students to improve knowledge and attitudes about people with disabilities. The workshop included presentations by students with disabilities, professionals who work with people with disabilities, and knowledge-building activities. It was evaluated using a pre-test, post-test comparison group design and was found to improve college students' knowledge and attitudes about people with disabilities. Qualitative analyses further depict attitudes toward people with disabilities. Implications for university initiatives and disability services educators are discussed.

Keywords: college students with disabilities, Higher Education, Opportunity Act, self-advocacy, people with disabilities

7. Packer, R., Abbinett, E., & Morris, E. (2022). 'Be prepared and give it a go!' Transitions into further education for learners with additional learning needs. *British Journal of Special Education*, 49(3), 463–485. <https://doi.org/10.1111/1467-8578.12409>

Abstract: Transitions in education are known to have an impact on learners both in social and emotional terms as well as academically. This article argues that transition experiences should be regarded as an on-going process rather than a one-off event. The move from compulsory education at the age of 16 can have a significant impact on engagement and retention, particularly for learners with additional learning needs (ALN), yet this is an underexplored area. While the transition from compulsory education to a further education (FE) setting brings increased independence, new opportunities and the emergence of adulthood, it can also be a time of trepidation and uncertainty for all learners, including those with ALN. Using an interpretive methodology, the voices of key stakeholders in the transition to FE from one setting were recorded to explore and inform good practice. Data were gathered using online questionnaires, interviews and focus groups. Findings ascertained the value of nurturing effective practitioner–learner relationships in preparation for transition, the importance of developing peer support networks and the provision of a central, safe space that is accessible to learners with ALN at all times.

Keywords: transition, further education, additional learning needs, special education needs, collaborative inquiry.

CAMBRIDGE JOURNAL OF EDUCATION

1. Henderson, M., Anders, J., Green, F., & Henseke, G. (2022). Does attending an English private school benefit mental health and life satisfaction? From adolescence to adulthood. *Cambridge Journal of Education*, 52(5), 539–553. <https://doi.org/10.1080/0305764x.2022.2040951>

Abstract: Previous research has shown that there is a small but significant cumulative private school advantage in terms of educational attainment in Britain. However, research on how school type influences non-educational outcomes is more scarcer. This paper aims to identify the extent to which school type influences satisfaction with life and mental health from adolescence to early adulthood. Using Next Steps, a longitudinal study of young people in England born in 1989/90, the authors use multiple variable regression analyses to address the research questions. They find that for this cohort there is no evidence of a difference for mental health and life satisfaction by school type for either men or women in adolescence or early adulthood.

Keywords: Private education, independent school, mental health, life satisfaction

2. Maitland, J., & Glazzard, J. (2022). Finding a way through the fog: school staff experiences of the Covid-19 pandemic. *Cambridge Journal of Education*, 52(5), 555–577. <https://doi.org/10.1080/0305764x.2022.2040954>

Abstract: This exploratory study reports on interviews carried out with 19 staff in UK schools during the early phase of the global Covid-19 pandemic. The focus of this qualitative study was to consider the impact of the pandemic on participants' mental health and wellbeing, and to identify buffering mechanisms which may have mitigated against adverse effects. Participants were employed in a range of role types (including leaders, teachers and teaching assistants) in different educational settings (primary, secondary and alternative provision), and in different regions of the United Kingdom. A process of thematic analysis identified five key themes from the data set: change and adaptation; loss; impact on wellbeing; risk and protective factors; and opportunities to reflect. Data indicate that staff resilience during this time can be understood as emerging from a nuanced and complex interaction of internal and external factors, and thus conceptualised within a socio-ecological framework.

Keywords: Education, mental health, wellbeing, resilience, Covid-19

3. Appiah-Kubi, J., & Amoako, E. O. (2022). Factors that motivate and encumber parental participation in children's education in Ghana. *Cambridge Journal of Education*, 52(5), 579–594. <https://doi.org/10.1080/0305764x.2022.2044758>

Abstract: While some parents actively participate in their children's education, others have been passive in playing this role. This qualitative research was conducted with parents of pupils in a Basic School as well as the teachers of primary classes four, five and six. Participants were purposively sampled due to their experience and knowledge in issues related to parents' participation and non-participation in their children's education. Findings revealed that parental participation stems from some parents' belief that their active participation in their children's education is part of their

training. Barriers to parental participation in their children's education include the high cost of living, which keeps parents preoccupied with economic ventures, and low self-esteem due to some parents' illiteracy, which makes them feel they cannot offer much besides paying their children's school fees. The authors recommend that school authorities include parents in planning programmes in which parents are expected to participate.

Keywords: Parents' motivation, parental participation, school supervision, teacher.

4. Lu, H. (2022). Pastoral care as shared responsibility: teachers' perspectives in a private teaching college in Hong Kong. *Cambridge Journal of Education*, 52(5), 595–613. <https://doi.org/10.1080/0305764x.2022.2044759>

Abstract: The paper explores teachers' endorsement of pastoral care, based on their socially and historically developed and interactively shaped understandings of teacher care, and how it surfaces in their practices. Participants are 25 academics in a self-financing teaching-oriented college in Hong Kong, in which teachers are also academic advisors for an assigned number of students and professional counselling is provided as another form of student support. The study identified three groups of teachers regarding their endorsement and enactment of pastoral care, namely, the supporters who are the overwhelming majority, the opponents and the bystanders. The author suggests that the relatively high level of endorsement and enactment of pastoral care found among the participants can be explained by its institutional, societal and cultural contexts. Implications of encouraging and facilitating teachers taking pastoral care as shared responsibility with professional counsellors in higher education are discussed.

Keywords: Pastoral care, teacher's perspectives, teaching-oriented college, Hong Kong

5. Jansen, D., Elffers, L., & Volman, M. (2022). And then there were three: (re-)distributing educational responsibilities in response to the growing use of shadow education in the Netherlands. *Cambridge Journal of Education*, 52(5), 615–632. <https://doi.org/10.1080/0305764x.2022.2044760>

Abstract: Over the past two decades, as in many countries, the use of private tutoring ('shadow education') has increased substantially in the Netherlands. Educators and policy makers are raising questions regarding the role that shadow education may play in relation to the traditional configuration of the home and school being assigned the responsibility for children's education. In five mixed focus groups ($n = 43$), the authors explored what key players – teachers, parents and tutors – consider to be their own and each other's pedagogical and educational responsibilities. Results show that two related tensions arise during role allocation: first, the normative question of whether a tripartite configuration which includes tutoring should be accepted or defied; and, second, concerns about tutoring not being equally accessible to students from all social classes. The study indicates that stakeholders' explication of mutual perspectives on individual and shared roles may yield new schemes of cooperation that are based on collaborative responsibility, rather than competition about individual responsibilities, for student learning.

Keywords: Private tutoring, shadow education, educational responsibilities, the Netherlands.

6. Oikonomidou, E., & Karam, F. (2022). Structural barriers and processes of defunding of funds of identity of refugee-background children. *Cambridge Journal of Education*, 52(5), 633–649. <https://doi.org/10.1080/0305764x.2022.2046704>

Abstract: Drawing insights from an ethnographic study with two young refugee-background children, this paper examines the multiple contexts that influence their identity negotiations during their first three years of resettlement to the United States. The analysis aims to expand the growing literature on funds of identity (FOI) with specific attention to structural barriers that defund their FOIs. The findings are categorised in three intersecting themes: 1) transnational and translinguistic funds of identity, which are challenged by xenophobia, monolingualism and social class barriers; 2) funds of intercultural identity, which are jeopardised by racial and religious exclusion; and 3) funds of academic identity in the home which are threatened by social class challenges. The paper concludes with the implications of the analysis for theory and practice.

Keywords: Refugee-background children, funds of identity, defunds of identity

7. Wong, B., Copsey-Blake, M., & ElMorally, R. (2022). Silent or silenced? Minority ethnic students and the battle against racism. *Cambridge Journal of Education*, 52(5), 651–666. <https://doi.org/10.1080/0305764x.2022.2047889>

Abstract: Racism is harmful for minority ethnic students from compulsory to tertiary education. Whilst there appears to be renewed public interest in structural racism, the realities of lived racism are, for many, a part of everyday life. This paper explores the experiences of minority ethnic students in UK higher education, especially their approaches to racism and coping strategies. Drawing on 51 in-depth interviews, the authors discuss the different ways in which racism can affect students and the extent to which it is normalised. As a means of coping, students appear to develop different degrees of emotional detachment and desensitisation towards racist behaviours. They discuss how white privilege in higher education can contribute to the silencing of minority ethnic students in the battle against racism, especially in white university spaces where racist behaviours are generally accepted, overlooked or trivialised. They conclude with a discussion of implications for policy and practice.

Keywords: BAME student minority, racism, silencing, white privilege.

COGNITIVE PSYCHOLOGY

1. Klein, S. D., Collins, P. F., & Luciana, M. (2022). Developmental trajectories of delay discounting from childhood to young adulthood: longitudinal associations and test-retest reliability. *Cognitive Psychology*, *139*, 101518. <https://doi.org/10.1016/j.cogpsych.2022.101518>

Abstract: Delay discounting (DD) indexes an individual's preference for smaller immediate rewards over larger delayed rewards, and is considered a form of cognitive impulsivity. Cross-sectional studies have demonstrated that DD peaks in adolescence; longitudinal studies are needed to validate this putative developmental trend, and to determine whether DD assesses a temporary state, or reflects a more stable behavioral trait. In this study, 140 individuals aged 9–23 completed a delay discounting (DD) task and cognitive battery at baseline and every-two years thereafter, yielding five assessments over approximately 10 years. Models fit with the inverse effect of age best approximated the longitudinal trajectory of two DD measures, hyperbolic discounting ($\log[k]$) and area under the indifference-point curve (AUC). Discounting of future rewards increased rapidly from childhood to adolescence and appeared to plateau in late adolescence for both models of DD. Participants with greater verbal intelligence and working memory displayed reduced DD across the duration of the study, suggesting a functional interrelationship between these domains and DD from early adolescence to adulthood. Furthermore, AUC demonstrated good to excellent reliability across assessment points that was superior to $\log(k)$, with both measures demonstrating acceptable stability once participants reached late adolescence. The developmental trajectories of DD we observed from childhood through young adulthood suggest that DD may index cognitive control more than reward sensitivity, and that despite modest developmental changes with maturation, AUC may be conceptualized as a trait variable related to cognitive control vs impulsivity.

Keywords: Delay discounting, Impulsivity, Adolescence, Cognitive development, Longitudinal analysis, Cognitive control.

2. Foster-Hanson, E., & Lombrozo, T. (2022). How “is” shapes “ought” for folk-biological concepts. *Cognitive Psychology*, *139*, 101507. <https://doi.org/10.1016/j.cogpsych.2022.101507>.

Abstract: Knowing which features are frequent among a biological kind (e.g., that most zebras have stripes) shapes people's representations of what category members are like (e.g., that typical zebras have stripes) and normative judgments about what they ought to be like (e.g., that zebras should have stripes). In the current work, we ask if people's inclination to explain *why* features are frequent is a key mechanism through which what “is” shapes beliefs about what “ought” to be. Across four studies ($N = 591$), we find that frequent features are often explained by appeal to feature function (e.g., that stripes are for camouflage), that functional explanations in turn shape judgments of typicality, and that functional explanations and typicality both predict normative judgments that category members ought to have functional features. We also identify the causal assumptions that license inferences from feature frequency and function, as well as the nature of the normative inferences that are drawn: by specifying an instrumental goal (e.g., camouflage), functional explanations establish a basis for normative evaluation. These findings shed light on how and why

our representations of how the natural world *is* shape our judgments of how it *ought* to be.

Keywords: Concepts, Folk biology, Normativity, Causal reasoning, Functional explanation, Teleology

3. Sablé-Meyer, M., Ellis, K., Tenenbaum, J., & Dehaene, S. (2022). A language of thought for the mental representation of geometric shapes. *Cognitive Psychology*, 139, 101527. <https://doi.org/10.1016/j.cogpsych.2022.101527>

Abstract: In various cultures and at all spatial scales, humans produce a rich complexity of geometric shapes such as lines, circles or spirals. Here, we propose that humans possess a language of thought for geometric shapes that can produce line drawings as recursive combinations of a minimal set of geometric primitives. We present a programming language, similar to Logo, that combines discrete numbers and continuous integration to form higher-level structures based on repetition, concatenation and embedding, and we show that the simplest programs in this language generate the fundamental geometric shapes observed in human cultures. On the perceptual side, we propose that shape perception in humans involves searching for the shortest program that correctly draws the image (program induction). A consequence of this framework is that the mental difficulty of remembering a shape should depend on its minimum description length (MDL) in the proposed language. In two experiments, we show that encoding and processing of geometric shapes is well predicted by MDL. Furthermore, our hypotheses predict additive laws for the psychological complexity of repeated, concatenated or embedded shapes, which we confirm experimentally.

Keywords: Geometry, Program induction, Shape perception, Language of thought, Complexity in cognition, Compositionality

4. Rubio-Fernandez, P. (2022). Demonstrative systems: From linguistic typology to social cognition. *Cognitive Psychology*, 139, 101519. <https://doi.org/10.1016/j.cogpsych.2022.101519>

Abstract: This study explores the connection between language and social cognition by empirically testing different typological analyses of various demonstrative systems. Linguistic typology classifies demonstrative systems as *distance-oriented* or *person-oriented*, depending on whether they indicate the location of a referent relative only to the speaker, or to both the speaker and the listener. From the perspective of social cognition, speakers of languages with person-oriented systems must monitor their listener's spatial location in order to accurately use their demonstratives, while speakers of languages with distance-oriented systems can use demonstratives from their own, egocentric perspective. Resolving an ongoing controversy around the nature of the Spanish demonstrative system, the results of Experiment 1 confirmed that this demonstrative system is person oriented, while the English system is distance oriented. Experiment 2 revealed that not all three-way demonstrative systems are person oriented, with Japanese speakers showing sensitivity to the listener's spatial location, while Turkish speakers did not show such an effect in their demonstrative choice. In Experiment 3, Catalan-Spanish bilinguals showed sensitivity to listener position in their choice of the Spanish distal form, but

not in their choice of the medial form. These results were interpreted as a transfer effect from Catalan, which revealed analogous results to English. Experiment 4 investigated the use of demonstratives to redirect a listener's attention to the intended referent, which is a universal function of demonstratives that also hinges on social cognition. Japanese and Spanish speakers chose between their proximal and distal demonstratives flexibly, depending on whether the listener was looking closer or further from the referent, whereas Turkish speakers chose their medial form for attention correction. In conclusion, the results of this study support the view that investigating how speakers of different languages jointly use language and social cognition in communication has the potential to unravel the deep connection between these two fundamentally human capacities.

Keywords: Demonstratives, Joint attention, Visual perspective taking, Peripersonal space, Social cognition

ECONOMIC & POLITICAL WEEKLY

1. *A Step Forward for Abortion Rights and a Blow to the Marital Rape*. (2022, November 21). Economic and Political Weekly. <https://www.epw.in/journal/2022/47/commentary/step-forward-abortion-rights-and-blow-marital-rape.html>

Abstract: The Supreme Court of India has recently held that Rule 3B of the Medical Termination of Pregnancy (Amendment) Act, 2021, which details the categories of women who are eligible for termination of pregnancy up to 24 weeks, should be interpreted to include any woman who has undergone a material change of circumstances. It also holds that marital rape would be rape for the purposes of the MTP Act.

2. *Electric Vehicle Mobility in India : Challenges and Opportunities*. (2022, November 21). Economic and Political Weekly. <https://www.epw.in/journal/2022/47/commentary/electric-vehicle-mobility-india.html>

Abstract: Considering the challenges emerging from extreme levels of urban pollution, high population density, and economic growth rates, the Indian government has shown keen interest in launching multiple initiatives to achieve 100% electric mobility by 2030. This article analyses the opportunities and challenges in their adoption.

3. *Recognition of Development Rights under the FRA, 2006*. (2022, November 21). Economic and Political Weekly. <https://www.epw.in/journal/2022/47/commentary/recognition-development-rights-under-fra-2006.html>

Abstract: Recognition and respect for basic services under Section 3.2 of the Scheduled Tribe and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 is an important concern for local development, and livelihood improvement. This article discusses how forest diversion for local basic services through an integrated approach anchored by state and local institutions has produced tangible benefits for local communities and forest conservation in the study areas.

4. *Ela Bhatt (1933–2022) : An ongoing journey*. Economic and Political Weekly. (2022, November 21). Retrieved January 13, 2023, from <https://www.epw.in/journal/2022/47/commentary/ela-bhatt-1933%E2%80%932022.html>

Abstract: The passing of Ela Bhatt leaves a certain void. This obituary is a reflection upon the style of leadership that she provided for civil society intervention in empowering poor women in the unorganised sector. Ela Bhatt's ideological position is located in the Gandhian frame of bringing about fundamental changes while continuing to engage with the system. She internalised the essence of Gandhian thought and interpreted it in her own field of action, and demonstrated that this interpretation was effective for the cause espoused.

5. *A roadside mishap or a systemic liquidation? : A fact-finding report.* Economic and Political Weekly. (2022, November 28). Retrieved January 13, 2023, from <https://www.epw.in/journal/2022/48/commentary/roadside-mishap-or-systemic-liquidation.html>

Abstract: The article is based on a fact-finding report of an accident killing 15 migrant workers near Surat. It argues that this mishap was not caused due to rash driving but was an episode signifying the liquidation of marginalised people.

6. *Monetary shocks and market segmentation : A short-run analysis of Demonetisation.* Economic and Political Weekly. (2022, December 3). Retrieved January 13, 2023, from <https://www.epw.in/journal/2022/48/commentary/monetary-shocks-and-market-segmentation.html>

Abstract: This article uses a short-term macroeconomic model in Williamson (2009) featuring goods and financial market segmentation to analyse the effect of such a shock in an economy with substantial informality and cash dependence. The households with access to formal financial markets experience an increase in consumption and those without such access experience a decline.

7. *Does FDI Induce Technological Advancements in India?* (2022, November 30). Economic and Political Weekly. <https://www.epw.in/journal/2022/48/commentary/does-fdi-induce-technological-advancements-india.html>

Abstract: The study used partial least squares-structural equation model and found that foreign direct investment and research and development expenditures have a positive relationship with high technology exports (indicator for technological advancement), whereas technical cooperation grants have a negative relationship with HTE in India.

8. *Estimating Poverty in India without Expenditure Data : A.* (2022, December 2). Economic and Political Weekly. <https://www.epw.in/journal/2022/48/special-articles/estimating-poverty-india-without%20expenditure-data.html>

Abstract: This paper utilises the expenditure data from 2004–05, 2009–10, and 2011–12 to impute household expenditure into a survey of durable goods expenditure conducted in 2014–15. The model’s predictions are comparable to the World Bank’s current adjustment method for the rural areas but imply a slower rate of poverty reduction for urban areas. In two validation tests, using past data, three alternative model specifications perform worse than the preferred model. The analysis indicates that survey-to-survey imputation, when feasible, is a preferable alternative to the current method of adjusting survey-based poverty estimates to later years.

9. *Examining the Etymology of ‘Deras’ in Punjab : Its History.* (2022, November 28). Economic and Political Weekly. <https://www.epw.in/journal/2022/48/special-articles/examining-etymology-%E2%80%98deras%E2%80%99-punjab.html>

Abstract: A product of religious pluralism in Punjab, the origin of the deras is closely intermeshed with the history of the Sikh panth itself. This paper is an attempt to explore the etymology of the term “dera,” by looking at its historical context, contemporary understanding and the sociopolitical and economic factors leading to a cardinal shift in its meaning.

10. *The Role of Industrial Policy in Market-friendly Economies : Case of.* (2022, November 28). Economic and Political Weekly. <https://www.epw.in/journal/2022/48/special-articles/role-industrial-policy-market-friendly-economies.html>

Abstract: The paper surveys the status of vaccine research and development and its manufacture in India and discusses the fact that the country has used industrial policy instruments rather sparingly in jump-starting R&D and manufacturing of vaccines for COVID-19 vaccines. This is despite India’s acknowledged innovation capability. The paper also contrasts the Indian case with that of the United States case discussed in Part 1 of this two-part paper.

11. *Is Public Expenditure Management Sufficient for Sustainable Fiscal.* (2022, November 28). Economic and Political Weekly. <https://www.epw.in/journal/2022/48/special-articles/public-expenditure-management-sufficient.html>

Abstract: In Odisha, the government has made continuous efforts to achieve the objectives of public expenditure management in view of the inherent deficiency of tax capacity to meet the rising public expenditure. Given the necessity of such an expenditure for ensuring the provision of basic facilities for citizens, it needs to be managed well to ensure efficiency, stability and development. Analysing fiscal discipline and strategic prioritisation of public expenditure using secondary data from 1980–81 to 2018–19, and the operational efficiency of public expenditure using primary data about the construction of check dams, it is found that fiscal discipline in Odisha is unsustainable due to lack of strategic prioritisation and operational inefficiency.

12. *German Strategic Autonomy Is Antithetical to American Primacy.* (2022, December 5). Economic and Political Weekly. <https://www.epw.in/journal/2022/49/strategic-affairs/german-strategic-autonomy-antithetical-american.html>

Abstract: Germany’s core strategic interests are at variance with that of the United States. The alliance between the two major transatlantic powers is under severe stress. The war in Ukraine has added an undue burden on the German economy, which is likely to lead to inflation, recession and social unrest. Germany, an emerging hard power, does not intend to let inflation, recession and social unrest derail it from the path of pursuing its foreign policy objectives. In the coming decades, Germany is not likely to sacrifice its economic interests at the altar of liberal international order and this is likely to pose a bigger challenge to German–American ties in the long run.

13. *Is Extreme Poverty Declining? : Findings from Agricultural Households.* (2022, December 4). Economic and Political Weekly. <https://www.epw.in/journal/2022/49/commentary/extreme-poverty-declining.html>

Abstract: The latest round of the Situation Assessment Survey of Agricultural Households is used to calculate income poverty instead of commenting on consumption poverty across non-comparable data sets. Using three different poverty lines, it is demonstrated that at least 21.1% of agricultural households are extremely income poor. Though the so-called “Great Indian Poverty Debate 2.0,” with statistical assumptions on consumption distribution or relative prices, may provide certain estimates of poverty, those seem to be disproportionate to the actualities of the extremely poor in recent times.

14. *A Critique of the Fifteenth Finance Commission*. (2022, December 4). Economic and Political Weekly. <https://www.epw.in/journal/2022/49/commentary/critique-fifteenth-finance-commission.html>

Abstract: This article analyses the conditions imposed by the central finance commissions on the release of grants to local bodies in the past and assesses the difficulties that they will face to draw the entire grants recommended to them during the Fifteenth Finance Commission period.

15. *Cuba Family Code : Towards the Democratisation of Family and Society*. (2022, December 4). Economic and Political Weekly. <https://www.epw.in/journal/2022/49/commentary/cuba-family-code.html>

Abstract: The latest family code in Cuba, with its progressive provisions regarding LGBT+ rights, recognition of women’s household work, strong measures against gender violence and child protection, has the potential to usher in a democracy within Cuban families. This spirit of democracy will eventually have a considerable impact on the political dynamics and power structures within the country.

16. *Adivasi Mahasabhas : Locating Gender in the Adivasi Movements in Assam*. (2022, December 4). Economic and Political Weekly. <https://www.epw.in/journal/2022/49/special-articles/adivasi%20mahasabhas.html>

Abstract: Adivasi mahasabhas are organised across Assam to politically mobilise the Adivasi communities. The paper argues that in contemporary Assam, Adivasi struggles are not limited to the issues of identity but through the mahasabhas, the student associations are claiming citizenship, economic and constitutional rights. While resisting the larger “Assamese” identity on the one hand, the Adivasi student associations also reproduce prevailing gender inequalities within the movement. The present study analyses the All Adivasi Women’s Association of Assam, which seeks to bring together the issues of women and labour to counter the patriarchy of both trade unions and student movements.

17. *The Longitudinal Ageing Study in India, Wave 1, 2017–18 : Key Findings*. (2022, December 4). Economic and Political Weekly. <https://www.epw.in/journal/2022/49/special-articles/longitudinal-ageing-study-india%20wave-1-2017%E2%80%9318.html>

Abstract: The Longitudinal Ageing Study in India is the world’s largest and India’s first ever survey that provides a longitudinal database for designing policies and

programmes for the older population in the broad domains of social, health, and economic well-being, in addition to understanding the science of ageing. In this paper, key findings from the baseline survey of LASI on a range of indicators that cover chronic health conditions, biomarkers (based on direct health examinations), healthcare utilisation, social and economic well-being of older adults in India and its states and union territories are presented.

18. *Exchange Rate Pass-through in India*. (2022, December 4). Economic and Political Weekly. <https://www.epw.in/journal/2022/49/special-articles/exchange-rate-pass-through-india.html>

Abstract: Exchange rate pass-through measures the responsiveness of prices to exchange rate changes. In this paper, the ERPT is estimated with respect to different price indices, namely the import price index, core inflation index (WPI_MP), wholesale price index, and consumer price index. This paper uses structural vector autoregressive and autoregressive distributed lag models for analysis. The presence of incomplete ERPT is observed with variations across price indices. In the short run, the extent of ERPT is the highest on IPI, followed by WPI, CPI and lowest on WPI_MP. The impact of crude oil prices and interest rate on exchange rate and domestic prices is also analysed.

19. *Ethics and Empathy within Power Structures*. (2022, December 5). Economic and Political Weekly. <https://www.epw.in/journal/2022/49/discussion/ethics-and-empathy-within-power-structures.html>

Abstract: A response to “Ethics and Empathy: Doing Ethnography in Conflict Zones” (EPW, 16 April 2022) highlights how ethical considerations are inseparable from any research, especially so in the context of a conflict zone.

20. *Advocacy for an Institute of Human Studies : Need to Think beyond STEM*. (2022, December 23). Economic and Political Weekly. <https://www.epw.in/journal/2022/50/alternative-standpoint/advocacy-institute-human-studies.html>

Abstract: India has been marching towards self-reliance in science, technology, engineering, mathematics and medicine disciplines; however, humanities and social sciences remain neglected. This article advocates the need for setting up a world-class institute for human studies that integrates scientific and humanistic pursuits, both pure and applied, with a focus on holistic development rooted in human values.

21. *Global Hunger Index 2022 : Methodological Clarifications and Fresh*. (2022, December 11). Economic and Political Weekly. <https://www.epw.in/journal/2022/50/commentary/global-hunger-index-2022.html>

Abstract: At first, the arguments put forward by the government to question India’s GHI 2022 ranking appear technically valid. However, being founded on narrow conceptual considerations, they are insufficient to defend India’s position. While India’s GHI ranking is affected also by the performance of other countries, the GHI score shows consistent deterioration since 2015, except in 2020. A

preliminary assessment of data indicates that India's GHI ranking should not be seen in isolation and instead is likely a manifestation of absolute increase in urban hunger.

22. *Drug Price Control in India : An Ongoing Debate*. (2022, December 12). Economic and Political Weekly. <https://www.epw.in/journal/2022/50/commentary/drug-price-control-india.html>

Abstract: Price control of life-saving essential medicines is the need of the hour, but the National Pharmaceutical Pricing Authority has allowed a hike of 10% in nearly 800 drugs and devices listed under the National List of Essential Medicines from 1 April 2022 because of the rising input costs. Prices of scheduled drugs are allowed an increase each year according to the wholesale price index. Input costs are rising primarily because India is heavily dependent on China for drug imports.

23. *Food Insecurity among Students in India*. (2022, December 12). Economic and Political Weekly. <https://www.epw.in/journal/2022/50/commentary/food-insecurity-among-students-india.html>

Abstract: There has been increased attention to food insecurity in India and globally since the 1990s. However, the food insecurity experienced by university students has not been widely discussed. We examine the scale and depth of the problem of student food insecurity and outline four key considerations that will need to be borne in mind in policy efforts to address the issue. Future work on this problem should be comparative, engaged with policy, informed by its complexity, and attuned to the significance of young people's agency.

24. *Sharing in Cities, and Stacked Streets*. (2022, December 12). Economic and Political Weekly. <https://www.epw.in/journal/2022/50/perspectives/sharing-cities-and%20stacked-streets.html>

Abstract: How should we distribute land areas between amenities— schools, hospitals, parks—and private plots for homes and jobs? What is the ideal proportion for each? We need to do this for two different situations, greenfield sites and brownfield sites. In greenfield sites, where we start with vacant land, we have considerable freedom to choose our proportions, and the ideal we have selected will be a very useful guide for new area planning. Even for brownfield sites, a notion of what would be ideal proportions for land distribution between amenities and buildable plots would be a useful guide. The article attempts to extract guiding principles and concludes with a detailed study of the redevelopment of BDD Chawls at Worli, Mumbai.

25. *Monetary Policy Announcements of the Reserve Bank of India and the*. (2022, December 12). Economic and Political Weekly. <https://www.epw.in/journal/2022/50/special-articles/monetary-policy-announcements-reserve-bank-india.html>

Abstract: Inflation-targeting central banks supplement their monetary policy announcements with communication in the form of speeches and publication of text documents. The markets react to the surprise component of the rate action and the

communication by the central bank. Thus, the monetary surprise derived from the reaction of markets, following a policy announcement, is agglutinated with the central bank information. The present paper attempts to identify and examine the efficacy of such an information shock in influencing the inflation expectations of households, interest rate expectations of agents, output and inflation.

26. *Revisiting Friedman's Construct of Corporations : Corporate*. (2022, December 12). Economic and Political Weekly. <https://www.epw.in/journal/2022/50/special-articles/revisiting-friedmans-construct-corporations.html>

Abstract: The ideological and juridical idea of what a corporation as a form is all about and what happens in the case of wrongs committed by such corporations is sought to be unpacked. The accepted notion in business and economics, which has seeped deeply in popular imagination too, that corporations exist primarily for benefiting their shareholders and hence their “accountability” is restricted to their shareholders only, is critically examined. For this, Milton Friedman’s influential conceptualisation of a corporation with the juridical construct of the corporate veil is interrogated and its far-reaching consequences through three recent important corporate cases in India are investigated.

EDUCATIONAL ACTION RESEARCH

1. Robson, J. V. K. (2021). An action research inquiry: facilitating early childhood studies undergraduate researcher development through group supervision. *Educational Action Research*, 30(5), 689–706. <https://doi.org/10.1080/09650792.2021.1872395>

Abstract: This paper reports an Action Research Inquiry that aimed to develop research supervision as a learning strategy, in order to facilitate early childhood undergraduates' completion of a primary research project and dissertation in the final year of their degree programme. Researchers in this context are conceptualised as a community of practice where there is a common goal for undergraduates to become researchers. In this community, supervision accompanies students along their research project; it provides opportunities for learning for the supervisor and the student. Communities of Practice are spaces for social learning. The objectives of introducing supervision as a group social practice were to provide a space to develop researcher identity, apply research skills and make sense of the experience of research. Group Supervision represented a shift in teaching and learning practice. Action Research was applied as a research method. Such an approach placed emphasis on the participation and collaboration of lecturers in a strategy for changing practice. The research was conducted in a University in the United Kingdom. One cycle of action research was completed. Findings from the study suggest Group Supervision is valued and understood, by lecturers and students, as a social learning process.

Keywords: Group Supervision, undergraduate research, dissertation in early childhood, action research

2. Woodrow, K., & Lasser, C. (2020). Fostering inclusive knowledge democracies: layering identities and situating practices of novice teacher researchers. *Educational Action Research*, 30(5), 707–724. <https://doi.org/10.1080/09650792.2020.1860104>

Abstract: Teacher action research is an important element for democratizing educational research, yet teachers often view it as unmanageable atop their other priorities. Grounded in sociocultural theories of identity and situated practice, this paper employs qualitative methods to explore how 16 novice teacher-researchers navigated their distinct identities as experienced teacher and novice teacher-researcher and improvised situated practices to generate empirical knowledge around teaching and learning in their specific contexts. Findings from this study reinforce the primacy of the teacher role and identity emanating from a student-first mindset. This mindset mediated the situated teacher-researcher practices and perspectives as the teachers struggled to maintain their professional identity and adopt the new role and identity of teacher-researcher. We argue that teacher-researchers need opportunities to study the work and experiences of others like themselves who are navigating identities, improvising practices, and making meaning out of data drawn from their own context. These findings are rooted in the realities of teachers' day-to-day work and offer teacher educators and professional developers some direction for partnering with novice teacher-researchers.

Keywords: Situated practice, teacher-researcher, identity, knowledge production, inquiry as stance

3. Mark, S. L., & Id-Deen, L. (2020). Examining pre-service mathematics and science teachers' plans to implement culturally relevant pedagogy. *Educational Action Research*, 30(5), 725–746. <https://doi.org/10.1080/09650792.2020.1775670>

Abstract: There is a need for greater guidance in preparing pre-service teachers to enact culturally relevant pedagogy while maintaining the content and rigor of mathematics and science in middle and secondary grades. This study investigated a group of pre-service teachers' plans to implement culturally relevant pedagogy in middle/secondary mathematics and science classrooms. Through this action research study, we sought to apply an existing culturally relevant pedagogy framework to coursework showcasing instructional planning in middle/secondary mathematics/science methods courses. This analysis would serve to help teacher educators systematically define evidence of successful culturally relevant pedagogy-aligned instructional planning, as well as identifying areas for improvement. In the coursework reviewed, there were non-traditional and traditional approaches to structuring learning tasks and activities in order to integrate elements of culturally relevant instruction. Among our results, we concluded that methods instruction could emphasize instructional planning that begins with culturally-conscious frameworks that aim to disrupt historical power dynamics, rather than conclude by making culturally significant connections, thereby supporting more pre-service teachers in possibly developing radically transformed mathematics and science instructional plans.

Keywords: Culturally relevant pedagogy, pre-service teachers, instructional planning, mathematics and science education

4. Cronin, S., Cook, T., Flattery, C., Griffiths, T., & Rodrigues, S. (2020). Enabling ambitious science teachers in urban challenging settings: the Hope Challenge model. *Educational Action Research*, 30(5), 747–767. <https://doi.org/10.1080/09650792.2020.1860105>

Abstract: The call to raise educational standards in the UK has a particular focus on the underachievement of pupils attending schools facing challenging socioeconomic circumstances. In 2017 the Education Policy Institute (UK) reported that the most disadvantaged pupils in England are on average over 2 years of learning behind non-disadvantaged pupils by the end of their secondary education. Contributing to this underachievement is the notion of 'poverty of expectation' with some teachers being unambitious in their teaching, failing to challenge their pupils to achieve at the highest levels. In primary science education this is exacerbated by the fact that non-specialist teachers commonly deliver the science curriculum. Lack of confidence and expertise in science can limit knowledge of teaching strategies and approaches required to engage and stretch pupils. The Hope Challenge Model for partnership brings together a university's Initial Teacher Education programme and urban primary schools facing challenging socio-economic circumstances. It aims to introduce trainee teachers to schools in a way that builds their confidence and nurtures more ambitious teaching for the future. This paper provides insights from an action research study designed to understand the processes and impact of the HCM (an action research cycle in itself) on primary science teaching. Early findings revealed how elements of the HCM approach support the goal of more ambitious science teaching in respect of trainees

and importantly and how this rippled out to build the confidence and skills of more established school-based staff.

Keywords: ambitious teaching, science teaching, partnership, challenging circumstances, action research, critical reflection.

5. Kervick, C. T., Haines, S. J., Green, A. E., Reyes, C. C., Shepherd, K. G., Moore, M., Healy, E. A., & Gordon, M. E. (2021). Engaging interdisciplinary service providers to enhance collaboration to support refugee families whose children have special health care needs. *Educational Action Research*, 30(5), 768–790. <https://doi.org/10.1080/09650792.2021.1877165>

Abstract: This article reports on the early stages of a community-based participatory action research project aimed at understanding how medical, educational and social service providers in our community partner with refugee families whose children have special health care needs, what challenges they face, and how we might collaboratively address identified needs through forming a community of practice and collaboratively conducting action research. In this manuscript, we detail the methods used to gather interdisciplinary professionals from our community in focus groups centered on how participants collaborated and supported refugee families of children with special health care needs and how we could join together to engage in action research to benefit their work. Findings reveal strengths, barriers, and needs related to interdisciplinary collaboration and ideas for community-engaged action research projects on which the community of practice could focus moving forward. An implication of this study is the importance of participatory processes for initiating action research projects within the community. We also offer guidance around potential areas for improved practice across school, medical and community settings when serving refugee families whose children have special health care needs.

Keywords: Action research, health care, special education, refugees, family partnership, communities of practice

6. Nazari, M., & Hashemi, M. R. (2020). From ‘they’ to ‘Faezeh’: an action research study of a co-educational language class. *Educational Action Research*, 30(5), 791–809. <https://doi.org/10.1080/09650792.2020.1867600>

Abstract: The present action-research study explored the experience of a co-educational class in a context where it was a total educational novelty. Generating data from a number of sources before, during, and after the course, the study portrays how the participants experienced initial challenges followed by mutual adaptability toward the end of the course. The findings of the study indicate how the experience has been culturally emancipatory with regard to bringing about reorientations in the learners’ perceptions about the other gender. Particularly, the findings showed that the learners gradually developed a perceptual understanding regarding the social status of the other gender, mediated by the opportunities provided during the course that facilitated developing such an understanding. The study also demonstrates that the experience of this action-research study brought about relevant changes in the policies of the school and its transformational potentials for the participating learners’ future careers.

Keywords: Single-sex education, co-education, teacher perceptions, learner perceptions, Iranian EFL context

7. Meredith, M., & Quiroz-Niño, C. (2021). Facilitating knowledge democracy in a global North/South academic collaboration. *Educational Action Research*, 30(5), 810–827. <https://doi.org/10.1080/09650792.2020.1866632>

Abstract: This article explains an action research response to the need for knowledge democracy in research projects between academics in global North and global South countries. It argues that if unspoken assumptions about knowledge creation are left unexamined, such collaborations can replicate forms of ‘epistemic injustice’. The paper is premised on the belief that such collaborations should be based upon practical acknowledgement of plurality in the domain of knowledge and upon the right and responsibility of people to contribute to research conceptualisations and questions as equals. The article focuses on the facilitation processes applied during an initial, five-day strategic planning meeting for a three-year Erasmus Mundus research project, in which academics from universities in Spain, Portugal, Peru and the UK participated, and the conceptualisations and strategic direction of the project were established. The authors draw upon their experiences as project co-designers and joint co-ordinators. We conclude that if international research projects are to promote knowledge democracy, processes need to be established in which relevant concepts and objectives can be articulated and the research questions established by all partners, in order to accommodate multiple perspectives. The insights offered also have relevance for collaborations between multiple stakeholders inside and outside of academia.

Keywords: Knowledge democracy, action research, erasmus projects, North/South collaboration

8. De Neve, D., Leroy, A., Struyven, K., & Smits, T. (2020). Supporting formative assessment in the second language classroom: an action research study in secondary education. *Educational Action Research*, 30(5), 828–849. <https://doi.org/10.1080/09650792.2020.1828120>

Abstract: Formative assessment (FA) is an important tool for supporting student learning. It provides learners with information about their learning process and supports them through feedback on how to improve their learning. Although it is recognized by secondary school teachers as crucial to language assessment, the integration of FA in their second language teaching practice has been limited. A participatory action research (PAR) design in the present study offers insights into how the learning process of teachers implementing FA can be encouraged. Teachers involved in this PAR were offered an FA toolbox and the opportunity to learn from their peers as sources of support. The data analysis of semi-structured interviews, action plans, and video coaching sessions shows that the participants react to this support in different ways. Some teachers experience the FA toolbox as a source of inspiration but are less inclined to reflect with colleagues on how to improve the implementation of FA. The majority of the participants indicate that the toolbox raises awareness on a more purposive use of FA. These teachers work with colleagues as critical friends to discuss their vision on teaching and FA implementation. Lastly, a third group of teachers are already using many of the tools offered by the toolbox. In

discussions with colleagues they mainly put forward suggestions, take up a coaching role and reflect on the contribution of their actions to the school policy.

Keywords: Formative assessment, participatory action research, second language education

9. Sáez Bondía, M., & Cortés Gracia, A. (2021). Action research in education: a set of case studies? *Educational Action Research*, 30(5), 850–864. <https://doi.org/10.1080/09650792.2020.1866631>

Abstract: The present work provides a review of two widely used approaches in educational research: action research and case study. Action research aims to improve educational practice by means of reflective cycles and shows variants according to a predominant paradigm, from technical to critical visions. A case study, described as an umbrella term, focuses on understanding classroom situations in real contexts. Although it seems that the defining characteristics of the case study are common among different authors, there are numerous classifications, which sometimes overlap. Based on a review of the ideas forming the main cornerstones of these two research types, we have analysed their common points and differences and considered the methodological possibility of relating both approaches in educational research projects taking place in non-controllable situations. In the present work, two joint approaches are proposed: action research as collective case study and action research as a set of case studies. The possibilities and limitations of both methodological perspectives are also discussed.

Keywords: Educational review, research in real context, methodology, action research, case studies

10. Modiba, M., & Stewart, S. (2021). Democratising knowledge through action research: theoretical reflections and challenges in the field. *Educational Action Research*, 30(5), 865–880. <https://doi.org/10.1080/09650792.2020.1871049>

Abstract: The article reflects on ways in which the use of participatory action research (PAR) in a study to improve the teaching of English as a second or additional language, promoted knowledge democracy. In the article, we pay special attention to how nine Senior Phase/Junior Secondary (Grade 7–9) school-teachers of English as a second or additional language, together with two researchers/the authors, reflected and identified factors that needed to be engaged with to improve teaching and make learning English meaningful to the Bafokeng children’s language, community values and ways of living. In developing the partnerships that were crucial for PAR, first, we acknowledged and affirmed how the teachers described and accounted for their teaching and, second, how together with the researchers, individually and collectively co-produced knowledge democratically about the teaching that was studied and how it could be improved. The argument is that without the partnerships that were developed and continuously constructed during field-work, the collaborative ways of identifying how to improve the teaching of English while recognizing language, values and ways of living they brought into lessons would have been impossible. Finally, the article reflects on the conditions that made the partnerships and roles played by all eleven participants in the study crucial in laying the foundations for meaningful professional development for the teachers.

Keywords: PAR, English teaching, knowledge democracy

11. Gilbert, C. (2021b). Walking the popular education spiral - an account and analysis of participatory action research with teacher activists. *Educational Action Research*, 30(5), 881–901. <https://doi.org/10.1080/09650792.2021.1875856>

Abstract: This article features an account and analysis of a participatory action research (PAR) project that involved the author and five teacher activist co-researchers. This piece has two principal aims. The first is to contribute to practitioners' knowledge and practice by offering an account of a PAR project, grounded in popular education, that provided a beneficial space for K-12 teacher activists. The second aim is to contribute to the teacher-activist literature by providing an analysis of the perceived benefits of popular education and PAR for participating teacher activists. Benefits included stronger relationships, developed knowledge and skills, emotional benefits, and the novel understanding that teacher activism includes forms of cultural activism. Implications include the notion that PAR may be useful for other teacher activists, and the conventional definition of teacher activism is likely too narrow.

Keywords: Participatory action research, popular education, teacher activism

EDUCATIONAL RESEARCH

1. Tobin, E., Sloan, S., Symonds, J., & Devine, D. (2022). Family–school connectivity during transition to primary school. *Educational Research*, 64(3), 277–294. <https://doi.org/10.1080/00131881.2022.2054451>

Abstract: Family–school connections during the transition from preschool to primary school are crucial, as they serve to bridge the gap between the home and school learning environments. In order to support children’s learning and engagement throughout their school career, more needs to be understood about the factors that contribute to successful or difficult transition experiences during this critical period. This case study was part of the Children’s School Lives (CSL) national longitudinal study of Irish primary schooling. It aimed to gain an in-depth understanding of mothers’ experiences of family–school connectivity during their child’s transition to primary school in Ireland, exploring how these connections helped them manage their experiences of the transition. A qualitative, interpretative phenomenological analysis (IPA) approach was used to investigate mothers’ experiences of the transition to primary school from preschool. The analysis drew on data collected from semi-structured interviews carried out with five mothers of children who had started primary school. Overall, findings from the analysis suggested that mothers had positive experiences of family–school connectivity during the transition period and indicated high levels of trust in their children’s teachers and their abilities. Mothers expressed a desire to be active participants in their child’s learning and transition experience, as well as to develop quality connections with their child’s school and teachers through regular communication and familiarity with the school environment. However, the analysis identified that experiences among the mothers were mixed.

Keywords: School transition, family-school connectivity, early childhood, parent experiences, parent perspectives, Ireland

2. van den Boom-Muilenburg, S. N., de Vries, S., van Veen, K., Poortman, C., & Schildkamp, K. (2022). Leadership practices and sustained lesson study. *Educational Research*, 64(3), 295–316. <https://doi.org/10.1080/00131881.2022.2090982>

Abstract: The continual improvement of teaching and learning is vital for schools in order to meet the rapid changes in the world around us. Lesson study is considered a valuable professional development approach in that regard. It is focused on teachers collaboratively studying live classroom lessons. Sustaining lesson study, by making its core components part of the school’s organisational routines, can help schools continually and systematically to improve student learning and teaching. However, despite the value of this approach, sustaining lesson study turns out to be complex. Leadership seems to play a crucial role therein, but the question is: how? The study aimed to gain in-depth insight into what leadership looks like in schools that sustained lesson study. A case study design was used to investigate leadership in two secondary schools. We conducted over 300 hours of observations through immersion within practice, collected school policy documents, and interviewed the school leadership. Data were analysed qualitatively. The analysis identified that both schools carried out various leadership practices for sustained lesson study. For leadership at schools that aim for sustained lesson study, it seems important to schedule lesson study, to be available, to have knowledge about lesson study and to appoint a lesson study

coordinator. Whether and how leadership practices were carried out seemed to depend on the school's context – for instance, by the policy reasons for working with lesson study. As such, it is important to examine the school and its leadership in context when considering sustainability.

Keywords: Leadership, leadership practices, lesson study, sustainability, case study, professional development

3. Gong, H. J., Kwon, J., & Brock, M. (2022). Experiential learning through a peer learning assistant model in STEM. *Educational Research*, 64(3), 317–333. <https://doi.org/10.1080/00131881.2022.2096092>

Abstract: Over recent years in colleges and universities, a peer-learning assistant (PLA) model has been introduced into Science, Technology, Engineering, and Mathematics (STEM) classes. Despite the significance of this alternative pedagogical approach in undergraduate education, studies of PLAs' lived experiences of the approach, and hence a deep understanding of the model and its application in higher education, are limited. The study sought to gain insight into the learning and teaching experiences of PLAs in an undergraduate STEM class. The PLAs were required to take a pedagogical class as mentors, in addition to having previously undertaken the STEM class themselves. A phenomenological methodology underpinned the study design, supporting the in-depth analysis of rich interview data. Interviews were conducted with five PLAs in STEM majors in a public university in the United States. Interviews were focused on identifying the PLAs' perceptions of their shared experiences, and the knowledge and skills they gained while mentoring peer STEM students and taking a peer-learning pedagogy class. Data were analysed qualitatively, using Kolb's experiential learning as an analytical framework. The analysis identified how the PLAs experienced the cycle of experiential learning by a) engaging in a STEM class as a student teacher; b) interacting with other PLAs in a pedagogical course; c) developing skills and learning from a pedagogy class; and d) readapting developed peer-teaching abilities and attitudes to a STEM class.

Keywords: Higher education, peer learning assistant (PLA) model, STEM education, experiential learning, phenomenology, pedagogy

4. Seynhaeve, S., Deygers, B., Simon, E., & Delarue, S. (2022). Interaction in online classes during Covid-19: the experiences of newly-arrived migrant students. *Educational Research*, 64(3), 334–352. <https://doi.org/10.1080/00131881.2022.2090981>

Abstract: In order to continue educational provision during the Covid-19 pandemic, many education systems switched to some form of Emergency Remote Teaching (ERT) in 2020. Research suggests that this may have disproportionately affected students from underprivileged communities. In this context, there is, therefore, a pressing need to consider how ERT may have impacted learners who are likely to be most affected by educational inequalities, including newly arrived migrant students (NAMS). As studies have highlighted the particular importance of interaction for effective distance learning, the research aimed to examine how NAMS in Flemish secondary schools experienced interaction with learning content, teachers and fellow students in online classes during ERT. A total of six semi-structured focus group interviews were conducted with 23 NAMS from six secondary schools in Belgium.

The interviews were centred on questions about participants' experiences with online interaction and participation. All focus groups were audio recorded and transcribed verbatim, after which transcriptions were coded and analysed qualitatively. The analysis revealed that, during ERT, participants reported experiencing a higher amount of learner–content interaction, mainly consisting of self-study material and tasks. Participants also indicated a lack of learner–teacher interaction, which was attributed to the shortage of speaking opportunities and students' decreased inclination to interact with instructors. In addition, most participants reportedly experienced few opportunities for learner–learner interaction during online classes.

Keywords: Distance learning, interaction, newly arrived migrant students (NAMS, secondary education, emergency remote teaching (ERT), Covid-19

5. Forbes, C., & Kerr, K. (2022). Comparing students' and professionals' understandings of neighbourhood assets. *Educational Research*, 64(3), 353–370. <https://doi.org/10.1080/00131881.2022.2069586>

Abstract: Internationally, young people experiencing poverty and related disadvantages do least well in school. These inequalities tend to be concentrated in places with high levels of poverty and poor outcomes across multiple domains. Although place-based initiatives are sometimes used by policymakers as a vehicle to improve outcomes, such programmes often fail to engage meaningfully with local resources, further marginalising disadvantaged communities.

This article considers what asset-based approaches, which seek to understand existing resources (assets) in disadvantaged places, might bring to such situations. Focused on a disadvantaged inner-city neighbourhood in England, it explores professionals' and young people's understandings of assets through an assets-mapping approach. During a two-year study, a university researcher was embedded in a secondary school, and 10 students (aged 13) were trained as co-researchers. Utilising visual mapping methods, they conducted 17 focus groups (45 minutes each) with around 225 of their peers in total. In addition, the researcher conducted 14 semi-structured interviews with a group of local multi-agency professionals and with the co-researchers. Data were analysed thematically. The analysis indicated that professionals and young people understood the neighbourhood's assets in relation to perceived 'lived territories'. Professionals described different residential groups as 'owning' different geographical 'territories', identifying professionally-led institutions as assets that could transcend these. Conversely, young people talked about 'territories' primarily in terms of power and control: they identified self-defined social spaces, away from professional scrutiny, as among the neighbourhood's most valuable assets.

Keywords: Educational disadvantage, assets-mapping, capabilities, student co-researchers, place-based initiatives, community

EDUCATIONAL PSYCHOLOGIST

1. Greenhow, C., Graham, C. R., & Koehler, M. J. (2022). Foundations of online learning: Challenges and opportunities. *Educational Psychologist*, 57(3), 131–147. <https://doi.org/10.1080/00461520.2022.2090364>

Abstract: *Online learning*—learning that involves interactions that are mediated through using digital, typically internet-based, technology—is pervasive, multi-faceted, and evolving, creating opportunities and challenges for educational research in the wake of the COVID-19 pandemic. In this special issue, we advance an interdisciplinary agenda for online learning research at the intersection of educational technology, educational psychology, and the learning sciences. In this first article in the issue, we define online learning including its variants, review historical and current contexts, explore its multidimensionality, and assert key issues shaping contemporary online learning. We propose five important lenses: *community*, *engagement*, *pedagogy*, *equity*, and *design-based research*, through which scholarly communities are creating knowledge that influences research and practice in online learning contexts. These lenses highlight points of conceptual overlap between the online and psychological learning literatures. The special issue is organized around these lenses and includes an article representing each one, complemented by commentaries that offer critical appraisal and synthesis.

2. Shea, P., Richardson, J., & Swan, K. (2022). Building bridges to advance the Community of Inquiry framework for online learning. *Educational Psychologist*, 57(3), 148–161. <https://doi.org/10.1080/00461520.2022.2089989>

Abstract: The COVID-19 pandemic forced institutions of higher education around the world to quickly transition to forms of distance education, including synchronous and asynchronous online learning. Often lacking conceptual, empirical, and practical understanding of online pedagogy, many institutions have met this endeavor with mixed success. It seems inevitable that online learning will continue to play a key role in all sectors of education and, accordingly, that online pedagogy deserves a more mainstream focus. To help build a joint understanding of foundational knowledge between the online learning, educational technology, and educational psychology communities, in this article, we summarize the most frequently cited conceptual model that shapes research and practice in the field of higher education online learning: the Community of Inquiry (CoI) framework. We describe the original CoI model and its foundational components (i.e., cognitive, social, and teaching presence) and highlight opportunities for improvement of the model by incorporating the educational psychology and learning sciences research base to inform: (1) conceptualizations of the social dimensions of collaborative learning and (2) understanding of learner contributions to online collaborative education including self-, co-, and shared regulation of learning. We propose that a new, more comprehensive conceptualization of the regulation of collaborative online learning be integrated into the existing CoI framework and that a new “presence” be referenced going forward—“Learning Presence.” Through this work, we strive to develop a more nuanced, generative, and informed vision of the future of online learning informed by relevant contemporary conceptualizations in educational psychology.

3. Martin, F., & Borup, J. (2022). Online learner engagement: Conceptual definitions, research themes, and supportive practices. *Educational Psychologist*, 57(3), 162–177. <https://doi.org/10.1080/00461520.2022.2089147>

Abstract: Online learning has increased in prominence across all levels of education, despite reported learner engagement being lower online than during in-person learning. Most learner engagement research and frameworks have focused on in-person learning environments but new frameworks and strategies for online learner engagement are emerging. In this article, we integrate scholarship from educational technology with scholarship from educational psychology and the learning sciences to argue for a reconceptualization of online learner engagement that considers both critical dimensions of learner engagement and the environmental affordances that influence them. We review literature on cognitive, affective, and behavioral engagement, translating it to online contexts. We introduce five research themes and accompanying frameworks from online learning research that have shaped understanding of learner engagement in online learning environments (i.e., engagement through communication, interaction, presence, collaboration, and community). With this new perspective that synthesizes the dimensions of learner engagement and online environmental affordances, we expand online learner engagement scholarship. Finally, leveraging this reconceptualization, we share an exemplar framework and strategies for supporting online learner engagement followed by recommendations for future research and practice.

4. Archambault, L., Leary, H., & Rice, K. (2022). Pillars of online pedagogy: A framework for teaching in online learning environments. *Educational Psychologist*, 57(3), 178–191. <https://doi.org/10.1080/00461520.2022.2051513>

Abstract: The growing shift toward online learning has brought new expectations for teachers, including skills needed to combine content knowledge with engaging pedagogical strategies that leverage the affordances of technology. As a result, online pedagogy has become increasingly relevant in modern-day schools. The challenge is understanding the nature of online pedagogy, the skills needed for teachers to succeed in online settings, and the theoretical underpinnings surrounding why these skills are essential. This article unpacks the foundational components of online pedagogy, comprised of five pillars grounded in the principles of learner-centeredness, constructivism, and situated learning. These pillars include the ability to (a) Build Relationships and Community, (b) Incorporate Active Learning, (c) Leverage Learner Agency, (d) Embrace Mastery Learning, and (e) Personalize the Learning Process. We describe their theoretical underpinnings, discuss related literature, and consider implications for teacher education with subsequent implications for scholarship across educational technology, educational psychology, and the learning sciences.

5. Tate, T., & Warschauer, M. (2022). Equity in online learning. *Educational Psychologist*, 57(3), 192–206. <https://doi.org/10.1080/00461520.2022.2062597>

Abstract: Online learning outcomes have indicated both a gap between online and face-to-face learning and the amplification of this gap for low-income and minority learners. Evidence from studies across K–16 reveals equity issues regarding access to online courses; student attendance and achievement; and, most recently, the impact of the pandemic. This article uses Warschauer’s conceptual framework of resources that

shape digital inclusion—physical, human, and social—to conceptualize the equity concerns that arose during the pandemic-induced shift to emergency distance learning. This framework reveals equity issues across all three areas from abruptly moving millions into online learning environments without: requisite access to up-to-date computers and broadband internet access, the skills needed to succeed in less structured online classes, or teachers trained to effectively conduct classes online. Finally, we leverage Warschauer’s framework to discuss ways to address these concerns and increase equity in online learning, as well as directions for research.

6. Hoadley, C., & Campos, F. C. (2022). Design-based research: What it is and why it matters to studying online learning. *Educational Psychologist*, 57(3), 207–220. <https://doi.org/10.1080/00461520.2022.2079128>

Abstract: The ever-changing nature of online learning foregrounds the limits of separating research from design. In this article, we take the difficulty of making generalizable conclusions about designed environments as a core challenge of studying the educational psychology of online learning environments. We argue that both research and design can independently produce empirically derived knowledge, and we examine some of the configurations that allow us to simultaneously invent and study designed online learning environments. We revisit design-based research (DBR) methods and their epistemology, and discuss how they contribute various types of usable knowledge. Rather than compromising objectivity, we argue for how design researchers can acknowledge their intent and, in so doing, promote ways in which research and design can not only produce better interventions but also transform people and systems.

7. Hickey, D. T. (2022). Situative approaches to online engagement, assessment, and equity. *Educational Psychologist*, 57(3), 221–225. <https://doi.org/10.1080/00461520.2022.2079129>

Abstract: The articles in this special issue on Improving Online Learning Theory, Research, and Practice characterize online learning using a set of “diverse lenses.” Most of these articles draw primarily from modern socio-constructivist perspectives and applied psychological constructs derived from more basic research. My strong embrace of situated cognition and design-based methods led to questions about how key issues in online learning such as online engagement, summative and formative assessment, and equitable learning were conceptualized. Specifically, I contrast how the socio-constructivist approaches in most of the articles might be re-conceptualized in a situative approach called *participatory learning and assessment*. I conclude by summarizing the potential value of a deeper embrace of situativity in online learning theory and research.

8. Means, B. (2022). Making insights from educational psychology and educational technology research more useful for practice. *Educational Psychologist*, 57(3), 226–230. <https://doi.org/10.1080/00461520.2022.2061974>

Abstract: Articles in this special issue on “Diverse Lenses on Improving Online Learning Theory, Research, and Practice” begin to address the gap between (1) research on psychological constructs that are too abstract to guide many instructional decisions and (2) empirically derived guidance that is quite concrete but limited in

explanatory value and generalizability. Needed now is a multi-level framework for online learning that offers specific guidance for practitioners' instructional decisions while also supporting a conceptual organization of accumulated research findings that fosters new insights and research questions. In this commentary, I describe a framework that would encompass multiple kinds of learning; different learning goals; discipline-specific ways of knowing and demonstrating knowledge; key technology features; and learner differences.

EUROPEAN JOURNAL OF TEACHER EDUCATION

1. Caena, F., & Vuorikari, R. (2021). Teacher learning and innovative professional development through the lens of the Personal, Social and Learning to Learn European key competence. *European Journal of Teacher Education*, 45(4), 456–475. <https://doi.org/10.1080/02619768.2021.1951699>

Abstract: This article outlines a secondary analysis of two European studies on innovative teacher professional development, through the lens of the Personal, Social and Learning to Learn European key competence. The 2018 European Recommendation describes it as being resilient, reflecting upon oneself, working with others, and managing time, information, learning and career. Adaptive, socio-emotional and metacognitive competences can be essential to harness other competences and navigate an unpredictable world, as argued in the LifeComp European framework. To nurture this key competence, teachers have to develop it themselves throughout the career. Innovative professional development can be a catalyst, addressing the complex and situated nature of teacher learning. It entails re-thinking time, space and mode of delivery, embedding active learning, relevance to practice, collaboration, coaching, feedback, and reflection. Innovative examples are presented as reciprocally related to Personal, Social and Learning to Learn, for resilient education systems in the wake of the COVID 19 pandemic.

Keyword: teacher professional development, teacher learning; personal, social and learning to learn key competence

2. Starkey, L., & Yates, A. (2021). Do digital competence frameworks align with preparing beginning teachers for digitally infused contexts? An evaluation from a New Zealand perspective. *European Journal of Teacher Education*, 45(4), 476–492. <https://doi.org/10.1080/02619768.2021.1975109>

Abstract: New Zealand schools are increasingly digitally infused with computer applications and tools underpinning education and influencing teachers' work. Teachers entering the profession need to develop professional digital competence and while existing frameworks can guide initial teacher education (ITE), they might not be appropriate because student teachers have different needs to experienced teachers. This article evaluates three frameworks (DigCompEdu; International Society for Technology in Education standards; and the Norwegian professional digital competence framework for teachers) against the context of preparing teachers to teach in digitally infused schools. Findings conclude that the frameworks align with stages of digital integration and although developed for experienced teachers, could be applied to ITE. However, where ITE is underpinned by professionalisation of teaching, a framework that prepares teachers for digitally infused schools should include three dimensions: being a member of the profession; how to teach; and what to teach.

Keywords: Digital competence, initial teacher education, preservice, professional digital competence, ISTE, DigCompEdu

3. Castañeda, L., Esteve-Mon, F. M., Adell, J., & Prestridge, S. (2021). International insights about a holistic model of teaching competence for a digital era: the digital teacher framework reviewed. *European Journal of Teacher Education*, 45(4), 493–512. <https://doi.org/10.1080/02619768.2021.1991304>

Abstract: This paper qualitatively examines a holistic framework for teaching in the digital era. The examination is based on teachers' perspectives of their career, that is, what core features can be said to characterise teacher's practice, across contexts, cultures and subjects. Semi-structured interviews of expert teachers, specifically from Australia, Europe and the Latin-America, are the main data source. The design process sought to examine teachers' approaches to their professional definition and their agency to enact this, against a theoretically validated framework. Results indicated the emergence of three defining categories based on the validation and synthesis of the relationships between six elements in the theoretical model.

Keywords: Teaching competence, holistic competences, validation, digital competence

4. Fernández-Batanero, J. M., Montenegro-Rueda, M., Fernández-Cerero, J., & García-Martínez, I. (2020). Digital competences for teacher professional development. Systematic review. *European Journal of Teacher Education*, 45(4), 513–531. <https://doi.org/10.1080/02619768.2020.1827389>

Abstract: Over the last years, Information and Communication Technologies have played a substantial role in improving both the quality of life for people. However, their potential in education is still developing. In this regard, this paper provides a systematic review of the literature on digital competencies and teacher professional development from 2008 to 2018. The purpose of this study is identifying research trends and potential directions on this topic for future research. The method followed is based on the PRISMA Statement Guidelines for Systematic Reviews and Meta-analysis. After applying criteria of inclusion, exclusion and thematic belonging, in Scopus and Wos databases, the sample was constituted in 21 studies. The selected studies emphasise the importance of digital competence as one of the challenges facing teachers today, being mainly qualitative methodology studies. Among the conclusions we highlight that most of the selected studies reveal a lack of teacher training and insufficient ICT training.

Keywords: Digital competences, educational innovations, professional development, teaching methods, systematic review

5. Gisbert-Cervera, M., Usart, M., & Lázaro-Cantabrana, J. L. (2022). Training pre-service teachers to enhanced digital education. *European Journal of Teacher Education*, 45(4), 532–547. <https://doi.org/10.1080/02619768.2022.2098713>

Abstract: Teachers must be digitally competent at the beginning of their career. The main aim of this paper is to study whether specific training is necessary to enable pre-service teachers in Catalonia with the required level of teacher digital competence (TDC). Three cases are discussed. In the first case, TDC is self-assessed among first-year pre-service teachers (N = 1166). In the second, TDC is assessed among second year pre-service teachers who received specific training (N = 33). The third case

measures TDC among third-year, pre-service teachers without any specific training in TDC (N = 151). Results reveal that pre-service teachers who are given specific training in TDC get better scores in the assessment compared to those who do not receive training. Practical implications on formative assessment emerge: specific training in TDC in higher education curricula must be practical and address methodological aspects of TDC.

Keywords: Teacher evaluation, Self-assessment, competency based education, digital technology, digital skills

6. Ley, T., Tammets, K., Sarmiento-Márquez, E. M., Leoste, J., Hallik, M., & Poom-Valickis, K. (2021). Adopting technology in schools: modelling, measuring and supporting knowledge appropriation. *European Journal of Teacher Education*, 45(4), 548–571. <https://doi.org/10.1080/02619768.2021.1937113>

Abstract: Integration of technology in schools rests on effective teacher education programmes that help teachers create new teaching and learning methods and adopt them for classroom use. Social learning processes play a key role in this, but there is a lack of understanding of their role in technology adoption and in evidencing them in teacher education programmes. Using the knowledge appropriation model, we propose a self-report questionnaire instrument to evidence knowledge creation and learning practices during training. With a sample of N = 109 in-service teachers participating in the Teacher Innovation Laboratory, a teacher professional development programme that is built around school–university co-creation partnerships, we demonstrate the instrument to be reliable and to differentiate between groups who completed different programmes. The instrument predicted intended adoption of technology-enhanced learning methods beyond individual level constructs, highlighting the important role that social practices play for the eventual adoption of technologies in the classroom.

Keywords: Knowledge appropriation, teacher professional development, technology adoption, school university partnership

INTERNATIONAL JOURNAL OF EDUCATIONAL DEVELOPMENT

1. Rizzotto, J. S., & França, M. T. A. (2022). Indiscipline: The school climate of Brazilian schools and the impact on student performance. *International Journal of Educational Development*, 94, 102657. <https://doi.org/10.1016/j.ijedudev.2022.102657>

Abstract: The article aims to assess the impact of the school climate on the academic performance of Brazilian students through the 2018 Program for International Student Assessment (PISA). The methodology used was the propensity score matching (PSM), Nearest neighborhood, Kernel, Radius, Inverse Probability-Weighted Regression-Adjustment (IPWRA), and the dose-response function (DRF). The results showed that a negative school climate is detrimental to students' school performance and the intensity of the climate affects grades in different ways. The peer effects on students' grades are significant, indicating that classmates matter for the perception of climate in addition to impacting the grade of others. Furthermore, the disciplinary climate in reading classes is one of the strongest predictors of academic performance and it is extremely important to understand the relationship between them.

Keywords: School climate, School performance, PISA

2. Bremner, N., Sakata, N., & Cameron, L. (2022). The outcomes of learner-centred pedagogy: A systematic review. *International Journal of Educational Development*, 94, 102649. <https://doi.org/10.1016/j.ijedudev.2022.102649>

Abstract: An increasing number of studies have investigated the implementation of Learner-Centred Pedagogy (LCP) in different countries, but there is still limited empirical evidence on what impacts LCP may have on learners and learning. This article summarises the findings of a systematic review of 62 journal articles reporting the outcomes of LCP implementation in low- to middle-income countries. The review found relatively few studies that provided objective evidence of LCP effectiveness. A higher number of studies identified non-objective perspectives of LCP effectiveness, such as teacher and student perceptions, as well non-cognitive outcomes such as increased student motivation, confidence, and enhanced relationships.

Keywords: Learner-centred pedagogy, Implementation outcomes, Systematic review, Low- and middle-income countries

3. Bennell, P. (2022). Teaching too little to too many: Teaching loads and class size in secondary schools in Sub-Saharan Africa. *International Journal of Educational Development*, 94, 102651. <https://doi.org/10.1016/j.ijedudev.2022.102651>

Abstract: This article presents and analyses comprehensive information for nearly all mainland countries in Sub-Saharan Africa on class size and teaching loads in secondary education. In particular, it argues that the student-teacher ratio is a poor indicator of both schooling efficiency and educational quality and also that teaching loads appear to be relatively low in SSA when compared with developed countries.

Keywords: Secondary education, Sub-Saharam Africa, Teaching Loads, Class size

4. Lu, W., Zhou, S., & Wei, Y. (2022). Government policies and unintended consequences: Rising demand for private supplementary tutoring in China. *International Journal of Educational Development*, 94, 102653. <https://doi.org/10.1016/j.ijedudev.2022.102653>

Abstract: In recent decades, the worldwide demand for supplementary tutoring has increased dramatically. Studies suggest that families' interest in supplementary tutoring is not only driven by a lack of school resources and the erosion of education quality, but also by governmental attempts to equalize educational opportunities. Using data from a nationally representative household survey from China, this study examined changes in students' participation in private tutoring after the introduction of a national equalization policy called "Ten Regulations to Reduce Academic Burden for Primary School Students." The findings showed that first-grade students' participation in private tutoring doubled after the policy was introduced. The estimation of dynamic effects indicated that the policy's impact on private tutoring participation had also increased over time. Further tests for heterogeneity between cities and student groups suggested that students in large cities, students with college-educated parents, and students in cities with severe shortages in after-school care tended to be more sensitive to the policy change, demonstrated by greater investments in private tutoring.

Keywords: Education Policy, Supplementary Private tutoring, Equality, China

5. Grochocki, L. F. D. M., & Cabello, A. F. (2022). Academic endogamy or immobility? The impact on scholarly productivity in a developing country. *International Journal of Educational Development*, 94, 102652. <https://doi.org/10.1016/j.ijedudev.2022.102652>

Abstract: Studies often associate endogamy with lower academic performance. Alternatively, external exposure seems to be correlated with higher research quality. Consequently, when measuring the effects of endogamy, authors should account for academic inertia as well as the different types of mobility. In this study, a large longitudinal database on the Brazilian higher education system is used to measure the effects of endogamy and mobility on scientific production. This paper examines whether types of scholars—such as those who never leave their doctoral institution or those that have some experience elsewhere, especially abroad, show differential results. Furthermore, it measures the changes in scholars' productivity when controlling for the distinct types of academic mobility throughout their careers. Results suggest that information about how mobile an academic is before and during its career is relevant when estimating the effects of endogamy on academic productivity and international academic experiences are correlated with higher likelihood of publishing.

Keywords: Academic inbreeding, Endogamy, Higher Education, Academic productivity, International mobility

6. Carnoy, M., Rosa, L., & Simões, A. (2022). Trends in the academic achievement gap between high and low social class children: The case of Brazil. *International Journal of Educational Development*, 94, 102650. <https://doi.org/10.1016/j.ijedudev.2022.102650>

Abstract: Since student achievement is related to educational attainment and to adult earnings, there is considerable interest in within-country achievement gaps between different social class groups, how they change over time, and the possible sources of those changes. In this paper, we analyze academic achievement gaps over a ten year period in Brazil. Our results suggest that social class inequality in public school student achievement on the Prova Brasil national test increased significantly among Brazilian 5th graders in the period 2007–2017, and that all of this increase was before 2013--indeed, mostly between 2011 and 2013. To the contrary, social class achievement inequality among 9th graders barely increased in 2007–2017, and that small increase appears to have occurred mainly in earlier years. We find that this increased achievement inequality among 5th graders was partly the result of increased inequality between schools with students of higher and lower average school class, and among municipalities with higher and lower income per capita and differing educational policies. Yet, a significant part of the increase is also related to changes in the within-school achievement gaps.

Keywords: Achievement gaps, Racial achievement gaps, Student achievement, Social Class, Trends inequality, School segregation

7. Hofmeyr, H. (2022). Why do girls do better? Unpacking South Africa’s gender gap in PIRLS and TIMSS. *International Journal of Educational Development*, 94, 102648. <https://doi.org/10.1016/j.ijedudev.2022.102648>

Abstract: South Africa exhibits one of the largest pro-girl gaps in education, yet the reasons behind this gap are poorly understood. This paper analyses South Africa’s pro-girl gap in Grade 4 reading and Grade 5 mathematics achievement. I make use of Oaxaca-Blinder decomposition analysis to decompose the observed gender gaps into their explained and unexplained components, separately by school socio-economic quintile. This approach allows me to present new evidence that part of the country’s pro-girl gaps in reading and mathematics are due to girls progressing through the early grades faster than boys. I also find that South African girls score higher on the constructs aimed at tapping student attitudes toward reading (reading self-efficacy and enjoyment, and engagement in reading lessons), and that these differences contribute significantly to the pro-girl gap in PIRLS reading achievement. Interestingly, despite outperforming boys in the TIMSS mathematics assessment, South African girls do not display more positive attitudes toward mathematics. The results suggest much more needs to be done to understand the reasons behind boys’ disadvantage in the early grades, since much of the pro-girl achievement gap in Grade 4 reading and Grade 5 mathematics can be attributed the pro-girl advantage in grade completion in earlier grades.

Keywords: Literacy Mathematics, Gender, Grade repetition, Student attitudes, Large-scale, Assessments

8. Ngidi, N. D., & Essack, Z. (2022). Mapping the unsafe school journey: Rural primary school children’s perspectives on dangerous social geographies in South Africa. *International Journal of Educational Development*, 94, 102655. <https://doi.org/10.1016/j.ijedudev.2022.102655>

Abstract: This paper describes a study conducted with 20 primary school children from a resource-poor rural community in South Africa. Using participatory mapping, the school children were asked to draw the paths they walked to school (referred to as child maps), and identify unsafe areas on this journey. The data were analyzed using participatory visual analysis techniques by focusing on the children's representations of their school journeys and their perspectives on their vulnerability on these paths. The analysis revealed a plethora of areas that posed a threat to children as they walked to school. Moreover, the findings suggest that children experienced heteropatriarchal violence on their school journeys, which evoked fear and anxiety since they associated this walk with risk. Using participatory mapping offered a unique opportunity to see how school children constructed and navigated the routes they walked to school, and how on these paths, different forms of violence occurred. The children's maps offered an important tool for understanding the significance of space and place on routes to school in rural communities.

Keywords: Children's geographies, Participatory mapping, rural community, School children, Unsafe journeys

9. Goodnight, M. R. (2022). "We went in favor of rebellion": The decisions that made India's Annual Status of Education Report (ASER). *International Journal of Educational Development*, 94, 102656. <https://doi.org/10.1016/j.ijedudev.2022.102656>

Abstract: The Annual Status of Education Report (ASER) is a monitoring and evaluation (M&E) effort that examines primary education and children's learning across rural India. ASER has become an influential M&E model, especially among civil society organizations in Global South countries. Created by the Indian non-governmental organization Pratham, ASER's dual origins in grassroots educational programming and national policymaking have distinctly shaped its methodology and goals. This study examines the cumulative decisions that produced ASER's innovative design through the narratives of ASER's three main architects. The architects tell stories that highlight their design decisions—decisions that reflect not only their expertise in the technical aspects of data collection, but also their knowledge of India's context, cultures, and politics. The study concludes that examining the history of M&E regimes is valuable in assessing their data's validity and usefulness for achieving educational equity and quality goals.

Keywords: Monitoring and evaluation, India, Validity, Civil society, Evaluation design, Politics

10. Eshtiyagh, J. (2022). The secularizing effect of education in Indonesia. *International Journal of Educational Development*, 94, 102658. <https://doi.org/10.1016/j.ijedudev.2022.102658>

Abstract: Does education influence support for the separation of religion and governance? This question is particularly important in the context of today's Muslim-majority nations. I analyze data on a large school construction program in Indonesia to investigate the relationship at the micro level. Implementing a difference-in-differences framework, the results indicate that the rise in the level of educational attainment increased the tendency toward secularization. Furthermore, the findings

show that people who believe in the majority religion but live in extremely religious or extremely non-religious regions are more likely to change their opinions on secularization as a consequence of educational attainment.

Keywords: Secularization, Education, Economic Development, Religion, Modernization theory

11. Kim, J. H. (2022). Preschool participation and students' learning outcomes in primary school: Evidence from national reform of pre-primary education in Ethiopia. *International Journal of Educational Development*, 94, 102659. <https://doi.org/10.1016/j.ijedudev.2022.102659>

Abstract: This study examines whether a large expansion of pre-primary education in Ethiopia affected subsequent students' learning outcomes during the national reform of pre-primary education. The study utilizes two comparable, representative early grade reading assessment data that straddle the reform period from 2010 to 2016, during which enrolment rates in pre-primary education soared by nearly ten times nationwide. We find that associations between preschool participation and literacy outcomes were positive and significant after the expansion, yet no such relationships were observed before the reform. However, there was little heterogeneity in the gains of the preschool participation by gender, urbanity, and parental literacy. We discuss implications for ongoing reform, including strategic and inclusive policy designed to close the learning gap between children from advantaged and disadvantaged backgrounds.

Keywords: Pre-primary education, Early childhood education, Educational inequality, Education reform, Ethiopia

JOURNAL OF CROSS-CULTURAL PSYCHOLOGY

1. Ji, L. J., Yap, S., Khei, Z. A. M., Wang, X., Chang, B., Shang, S. X., & Cai, H. (2022). Meaning in Stressful Experiences and Coping Across Cultures. *Journal of Cross-Cultural Psychology*, 53(9), 1015–1032. <https://doi.org/10.1177/00220221221109552>

Abstract: We report three studies to examine how culture may influence people’s tendency to see meaning in stressful experiences (MISE), as well as their coping responses. Using a newly developed MISE scale with established measurement invariance across both cultures, we found that Chinese participants were more likely than Euro-Canadians to see meaning in stressful experiences (Studies 1 and 2), to adopt *acceptance* and *positive reframing* coping styles (Study 1), and to respond more positively to the COVID-19 pandemic (Study 2). To establish a causal link between MISE and coping, we primed MISE in Study 3 with Chinese participants and found an increase in resilient coping. The research highlights the important roles of culture and meaning making in coping.

Keywords: Culture, Meaning in stressful experiences, coping

2. Harris, E. A., Milfont, T. L., & Hornsey, M. J. (2022). Belief in Luck and Precognition Around the World. *Journal of Cross-Cultural Psychology*, 53(9), 1033–1053. <https://doi.org/10.1177/00220221221110462>

Abstract: Although magical beliefs (such as belief in luck and precognition) are presumably universal, the extent to which such beliefs are embraced likely varies across cultures. We assessed the effect of culture on luck and precognition beliefs in two large-scale multinational studies (Study 1: $k = 16$, $N = 17,664$; Study 2: $k = 25$, $N = 4,024$). Over and above the effects of demographic factors, culture was a significant predictor of luck and precognition beliefs in both studies. Indeed, when culture was added to demographic models, the variance accounted for in luck and precognition beliefs approximately doubled. Belief in luck and precognition was highest in Latvia and Russia (Study 1) and South Asia (Study 2), and lowest in Protestant Europe (Studies 1 and 2). Thus, beyond the effects of age, gender, education, and religiosity, culture is a significant factor in explaining variance in people’s belief in luck and precognition. Follow-up analyses found a relatively consistent effect of socio-economic development, such that belief in luck and precognition were more prevalent in countries with lower scores on the Human Development Index. There was also some evidence that these beliefs were stronger in more collectivist cultures, but this effect was inconsistent. We discuss the possibility that there are culturally specific historical factors that contribute to relative openness to such beliefs in Russia, Latvia, and South Asia.

Keywords: Magical beliefs, luck, precognition, cross-cultural, multi-national

3. Han, Y., Sears, G. J., Darr, W. A., & Wang, Y. (2022). Facilitating Cross-Cultural Adaptation: A Meta-Analytic Review of Dispositional Predictors of Expatriate Adjustment. *Journal of Cross-Cultural Psychology*, 53(9), 1054–1096. <https://doi.org/10.1177/00220221221109559>

Abstract: This meta-analytic review examines the relationship between various dispositional characteristics and expatriate adjustment, including the Big Five constructs and other characteristics that have garnered more recent empirical attention (i.e., cultural empathy/flexibility, cognitive intelligence, emotional intelligence). Using 62 primary studies ($n = 13,060$), we found that the Big Five traits play an important role in expatriate adjustment; however, when assessing the relative influence of these predictors, characteristics such as cultural empathy, cultural intelligence (e.g., motivational CQ), and emotional intelligence appear to exert a stronger influence on adjustment outcomes. Various cultural variables (cultural distance, cultural tightness, gender inequality in the host country) and year of publication were found to moderate some relationships, indicating that sociocultural factors may temper some of these effects.

Keywords: expatriate adjustment, meta-analysis, personality traits, emotional intelligence, cultural intelligence, cultural distance, expatriate gender

4. Wang, H., & Lou, X. (2022). The Correlation Between Self-Compassion and Life Satisfaction Varies Across Societal Individualism-Collectivism: A Three-Level Meta-Analysis. *Journal of Cross-Cultural Psychology*, 53(9), 1097–1116. <https://doi.org/10.1177/00220221221109547>

Abstract: Self-compassion is positively correlated with life satisfaction. However, no previous work examined the cross-cultural difference regarding the effect size of this correlation. Using 79 independent samples ($N = 23,976$) from 26 countries/regions, this three-level meta-analysis synthesized the effect sizes of their correlation, partitioned the between-study heterogeneity into the within- and between-country levels, and examined the moderating role of national culture according to the revised Minkov-Hofstede model. Results indicated that self-compassion was positively correlated with life satisfaction, with a moderate-to-large effect size ($.40 \leq r \leq .47$); 33.66% and 35.73% of the effect size variance could be attributed to the within-country and between-country heterogeneities; this correlation was stronger in samples collected from more individualistic societies. This study highlights that self-compassion may fit differently into different cultural realities and the importance of raising cultural awareness in future self-compassion research.

Keywords: Self-compassion, life satisfaction, individualism-collectivism, meta-analysis, culture

5. Blomster Lyshol, J. K., Pich, O., & Seibt, B. (2022). Moved to Norway, Then Moved by Norway: How Moments of Kama Muta Is Related With Immigrants' Acculturation. *Journal of Cross-Cultural Psychology*, 53(9), 1117–1144. <https://doi.org/10.1177/00220221221104944>

Abstract: In this paper, we investigated the relation between a positive social emotion, *kama muta*, and immigrants' acculturation to Norway. *Kama muta* is evoked by a sudden intensification of a communal sharing relationship. Since communal sharing relationships are characterized by feeling one with others and orienting one's actions to something they have in common, we predicted that feeling *kama muta* about Norway or Norwegians would enhance immigrants' motivation to adopt Norwegian culture. We investigated this with exploratory sequential mixed methods:

In Study 1, we interviewed 18 immigrants in Norway to understand in which situations the emotional experience, that can be identified as kama muta, occurs in connection to Norway and Norwegians, and how this affects acculturation to Norwegian culture. Based on the results of Study 1, we developed prompts that assessed immigrants' kama muta experiences in connection with Norway and formulated hypotheses relating to immigrants' bicultural identity integration, acculturation motivations, motivation to stay, and acculturative stress. In Study 2 we quantitatively assessed these hypotheses in a larger sample of immigrants to Norway ($N=142$). The frequency and intensity of kama muta experiences in connection with Norway uniquely predicted immigrants' motivation to adopt Norwegian culture, and negatively predicted acculturative stress. This suggests that kama muta can connect immigrants to their new homeland.

Keywords: kama muta, moved, acculturation, immigration, mixed methods, emotions

6. Jamshed, N., Stewart, A. L., & Overstreet, N. M. (2022). Social Dominance, Sexual Double Standards, and Violence Against Women in Tight and Loose Cultures. *Journal of Cross-Cultural Psychology*, 53(9), 1145–1165. <https://doi.org/10.1177/00220221221104950>

Abstract: Sexual double standards are associated with adverse consequences for women, including violence. However, little research examines sexual double standards across cultures that vary in tight or loose sexuality norms. Therefore, using social dominance theory, this study examined sexual double standards and violence against women in the United States of America (U.S., a loose culture) and Pakistan (a tight culture). We hypothesized that social dominance orientation is associated with violence against women via endorsement of sexual double standards for both the U.S. and Pakistan. We recruited 315 people in total from the U.S. ($N=169$; women = 56.3%; $M_{\text{age}} = 29 \pm 5.6$ years) and Pakistan ($N=138$; women = 73%; $M_{\text{age}} = 26 \pm 5.3$ years). After establishing measurement invariance for our measures, we used structural equation modeling to analyze our theoretical model in two cultural settings. Multigroup path models found support for social dominance theory's proposition that people higher on social dominance orientation justify violence against women through their endorsement of sexual double standards in both countries, above and beyond more general attitudes toward women (i.e., ambivalent sexism). We also found that the *processes* (i.e., social dominance and sexual double standards) supporting violence against women are similar in the two countries. A sexual double standard is found to be strong predictor of justification of violence even after controlling for gender, ambivalent sexism, and cultural tightness/looseness for both countries. Discussion focusses on a sexual double standard may be a risk factor for violence against women in different parts of the world.

Keywords: sexual double standards, social dominance orientation, justification of violence, Pakistan, U.S.

7. Bartucz, M. B., Matu, S. A., & David, D. O. (2022). The Protective Effect of Culture on Depression During Covid-19 Pandemic: A Romanian National Study. *Journal of Cross-Cultural Psychology*, 53(9), 1166–1186. <https://doi.org/10.1177/00220221221109564>

Abstract: Previous studies indicated that collectivism represents a protective factor against depressive disorders, even among vulnerable populations. The protective effect of collectivism in relation to depressive disorders is often attributed to the social support networks available to individuals in collectivistic societies. The current study aims to investigate the protective effect of collectivism in the relationship between psychological vulnerabilities and depression. Moreover, we examined whether the protective effect of collectivism in relation to depression can be explained through the mechanism of social support. We measured individualism-collectivism for 42 Romanian counties ($n = 2,882$) before the onset of the COVID-19 pandemic. Data for irrational cognitions, depression, and social support were collected online during the lockdown in Romania ($n = 5,310$). All instruments showed acceptable measurement and scalar invariance across regions. In a multi-level regression model, county-level collectivism was associated with lower levels of depressive symptoms $b = -.032$, 95% CI $[-0.045; -0.019]$, while irrational cognitions were positively associated with depression $b = .474$, 95% CI $[0.438; 0.510]$. The interaction between irrational beliefs and collectivism had a significant and negative effect on depression, $b = -.004$, 95% CI $[-0.008; -0.000]$. The indirect effect of collectivism on depression via social support was tested in a two-level SEM model. Explicit and implicit social support were not significant mediators. Collectivism was negatively associated with the perceived availability of explicit social support, $b = -.043$, 95% CI $[-0.074; -0.012]$. The results support a general protective effect of collectivism on mental health but cast doubt that the mechanism for this effect is related to social support.

Keywords: individualism-collectivism, irrational beliefs, depression, COVID-19, Romania

8. Kuscul, G. H., & Adamsons, K. (2022). Maternal and Paternal Predictors of Turkish Fathers' Nurturing and Caregiving. *Journal of Cross-Cultural Psychology*, 53(9), 1187–1205. <https://doi.org/10.1177/00220221221111814>

Abstract: This study uses bioecological and identity theories to explore associations among maternal education and employment, fathers' gender role beliefs and identities, and fathers' caregiving and nurturing involvement in a Turkish context. The study sample was derived from data collected in 2016 from 1,102 fathers of children between birth and 3 years of age. We used path analysis in structural equation modeling to test direct and indirect associations. Direct paths between maternal education and employment and fathers' caregiving and nurturing behaviors were not significant; however, some fathers' gender role beliefs mediated the associations. Modernity beliefs mediated the association between education and caregiving, and fathers' emotional closeness mediated the association between maternal education and fathers' nurturing behaviors. Furthermore, maternal employment was indirectly associated with fathers' caregiving via his beliefs about the equality of sons and daughters and division of labor at home. Father identity development was not associated with maternal education or employment, and only mediated associations between fathers' beliefs about emotional closeness and their

caregiving and nurturing involvement. The current findings suggest that cultural norms and beliefs likely play themselves out via parenting styles and family structures (the microsystems for children), and therefore these family variables may contain very valuable cultural information in understanding the processes of father identity construction, masculinity beliefs, and father involvement behaviors.

Keywords: fatherhood identity, masculinity roles, father involvement, Turkish fathers, fathering, predictors of father caregiving, predictors of father nurturing

9. Lau, E. H., Rattan, A., Romero-Canyas, R., & Savani, K. (2022). Culturally Relevant Frames Increase Individuals' Motivation to Contribute to Carbon Emissions Offsets. *Journal of Cross-Cultural Psychology*, 53(10), 1211–1234. <https://doi.org/10.1177/00220221221110465>

Abstract: We theorized that culturally-relevant frames—language that invokes valued cultural concepts without changing the communicated information—can increase people's willingness to engage in environmental action. Across eight experiments ($N=10,294$) in two national contexts, we adjusted the language of a carbon offset request that people received as part of a simulated flight purchase. We investigated the role of five constructs that are valued across cultures but vary in their importance: choice, economic growth, social change, moral responsibility, and sanctity. We found that the social change, moral responsibility, and sanctity frames did not differ from the control condition in either culture. Invoking the concept of *economic development* increased Indians' willingness to contribute to a carbon offset compared to the control frame, whereas invoking the concept of *choice* increased US Americans' willingness. If these simulated decisions translate into actual actions, the findings suggest that framing environmental requests using culturally-relevant frames have the potential to promote sustainable behavior. More generally, the findings highlight the importance of paying attention to culture to motivate environmental action.

Keywords: Carbon offsets, framing, culture, choice, economic development

10. Unal, A. F., & Chen, C. C. (2022). Preference for Inequality and Ethical Trade-Offs: A U.S. – Turkey Comparison. *Journal of Cross-Cultural Psychology*, 53(10), 1235–1256. <https://doi.org/10.1177/00220221221110469>

Abstract: Societies and organizations face the dual challenges of increasing economic prosperity while also achieving social justice and protecting individual human rights. Drawing on cross-cultural research and social dominance theory, we investigate differences in trade-off decisions between managers and professionals from the U.S. and Turkey in responding to ethical dilemmas in two contexts: business organizations and their respective societies at large. U.S. managers, compared with their Turkish counterparts, and individuals of both the U.S. and Turkish nationalities with stronger social dominance orientation, prioritized economic prosperity over social justice, and the rights of the privileged over rights of the disadvantaged. Finally, social dominance orientation mediated some of the nationality effects. Theoretical and practical implications of cross- and within-cultural differences in ethical trade-offs are discussed.

Keywords: culture, ethical trade-offs, social justice, individual rights, social dominance orientation, power

11. Schulze, C., Buttelman, D., Zhu, L., & Saalbach, H. (2022). Context-Sensitivity Influences German and Chinese Preschoolers' Comprehension of Indirect Communication. *Journal of Cross-Cultural Psychology*, 53(10), 1257–1276. <https://doi.org/10.1177/00220221221104952>

Abstract: Making inferences in communication is a highly context-dependent endeavor. Previous research found cultural variations for context-sensitivity as well as for communication comprehension. However, the relative impact of culture and context-sensitivity on communication comprehension has not been investigated so far. The current study aimed at investigating this interplay and tested 4- and 6-year-old children from Germany ($n = 132$) and China ($n = 129$). Context-sensitivity was measured with an adapted version of the Ebbinghaus illusion. In this task, children have to discriminate the size of two target circles that only appear to be of similar size due to context circles surrounding the target circles. As expected, performance scores indicated higher degrees of context-sensitivity in Chinese compared to German children and that 6-year-olds were more context-sensitive than 4-year-olds. Further, in an object-choice communication-comprehension task, children watched videos with puppets performing every-day activities (e.g., pet care) and had to choose between two options (e.g., dog or rabbit). A puppet expressed what she wanted either directly (“I want the rabbit”) or indirectly (“I have a carrot”). The children had to choose one option to give to the puppet. In both cultures, 6-year-olds outperformed 4-year-olds and children understood direct communication better than indirect communication. Culture was found to affect children’s processing speed of direct communication. Moreover, culture influenced children’s context-sensitivity while context-sensitivity influenced children’s accuracy in the indirect (but not the direct) communication task. These findings demonstrate that taking context into account is especially important when we are confronted with indirect communication.

Keywords: indirect communication, relevance inference, intentionality, context-sensitivity, cross-cultural, Ebbinghaus task, optical illusion

12. Farley, S., Dawson, J., Greenaway, T., Meade, K., & Hernández Ibar, D. (2022). Does International Status Affect Competence Ratings in Newly Formed Multinational Teams? The Role of Psychological Safety Growth and Verbal Behavior. *Journal of Cross-Cultural Psychology*, 53(10), 1277–1299. <https://doi.org/10.1177/00220221221115654>

Abstract: National status has been found to influence how people are perceived in multinational teams. Team members from an international background are often perceived as less competent than those from the local context. Studies mainly focus on language differences to explain this phenomenon, but in this study, we offer a different theoretical explanation. We propose that national status can affect psychological safety and its development within teams, which in turn affects verbal behavior and competence ratings. To test this notion, we examine differences in psychological safety growth, verbal behavior and competence ratings among home country nationals based in the United Kingdom (UK) and international members of newly formed multinational teams. In a sample of 519 team members (101 teams),

results showed that internationals, compared to home country nationals, have lower initial psychological safety, as well as slower development in psychological safety over time. Furthermore, the relationship between national status and competence ratings was partially mediated by psychological safety growth and verbal behavior. These results were fully replicated on a separate sample of 538 team members (90 teams) in a second study using an identical research design. However, exploratory analyses indicated that the pattern of findings were not consistent across team members from Africa, Asia, and Europe. The psychological safety of home nationals only started and grew more quickly than that of Asians, while only African and Asian team members spoke less and were rated as less competent. Together these results have implications for managers of newly formed multinational teams.

Keywords: multinational teams, national status, psychological safety, verbal behavior, competence ratings

13. Chen, X., Wang, Z., Deng, Z., & Wei, Q. (2022). Social Class and Socialization Values in the United States and China. *Journal of Cross-Cultural Psychology*, 53(10), 1300–1306. <https://doi.org/10.1177/00220221221118389>

Abstract: The psychological correlate of social class across cultures is a topic of debate. Some have argued cross-cultural similarities, while others have maintained culturally divergent manifestations of social class. Using the data from the World Value Survey 2017 to 2020 (Wave 7), the current study examined the associations between social class and socialization values among parents in the United States ($n = 1,615$) and China ($n = 2,524$). Results indicated that all social class indices (i.e., education level, income, subjective social status, and composite social class) were positively associated with self-oriented socialization values in the United States, whereas such associations were absent in China, except for education level. In addition, higher social class, in terms of higher income, higher subjective social status, and higher composite social class, was associated with greater other-oriented socialization values in China. However, such associations were absent (for income, education level, and composite social class) or even reversed (for subjective social status) in the United States. These findings extend the literature on social class variations in parenting and highlight cultural specificity in the psychological manifestations of social class.

Keywords: social class, culture, socialization values, self-orientation, other-orientation

14. Matschke, C. (2022). The Impact of Social Support on Social Identity Development and Well-Being in International Exchange Students. *Journal of Cross-Cultural Psychology*, 53(10), 1307–1334. <https://doi.org/10.1177/00220221221118387>

Abstract: International exchanges have become increasingly common. Although it is an explicit goal of exchange programs that exchange students immerse in another culture and learn to feel like a local, there is no systematic research on the development of one's social identity during the exchange year. A longitudinal study with German high school students who spend an exchange year in the United States investigates the trajectories of social identification, identity integration of primary and secondary cultural identities, and well-being longitudinally at three measurement

times (before departure, $N = 556$, 3 months, $N = 210$, and 6 months after arrival, $N = 178$). As social support is suggested to be an important resource, multilevel analyses tested the impact of three subcomponents of social support (i.e., emotional, instrumental, and compatibility-informational support) on the individual trajectories. It was found that social identification and identity integration increased over time, whereas well-being was high across all times. Identity integration mediated the positive effect of social identification on well-being. Moreover, emotional support was positively related to well-being and compatibility-informational support was positively related to identity integration. Instrumental support fostered early identity integration but diminished its slope when applied at later times. The present data demonstrate that an exchange year stimulates the development of the social self-concept, which is relevant for well-being. Moreover, it shows that the right kind of social support at the right time can foster this development.

Keywords: International exchange, social support, social identification, identity integration, well-being

JOURNAL OF ECONOMIC EDUCATION

1. Al-Bahrani, A., Apostolova-Mihaylova, M., & Marshall, E. C. (2022). Helping some and harming others: Homework frequency and tradeoffs in student performance. *The Journal of Economic Education*, 53(3), 197–209. <https://doi.org/10.1080/00220485.2022.2075506>

Abstract: The authors of this article examine the potential for increased student learning and retention through more frequent assignments. They conduct a field experiment that investigates whether student knowledge retention can be improved by increasing the frequency of homework assignments, motivating students to have more exposure to the material, and reducing the incentives for students to procrastinate. They find that the impact of the treatment on student performance varies based on the student's past academic performance. Students on the lower end of the academic performance distribution benefit from the structure imposed by more frequent assignments and perform better. However, students with high prior academic performance are harmed by the intervention. The final exam scores of high-performing students are lower in courses with higher assignment frequency.

Keywords: Achievement; behavioral economics; heterogeneous performance; homework assignments; self determination theory; undergraduate teaching

2. Hook, A. (2022). Examining modern money creation: An institution-centered explanation and visualization of the “credit theory” of money and some reflections on its significance. *The Journal of Economic Education*, 53(3), 210–231. <https://doi.org/10.1080/00220485.2022.2075510>

Abstract: Despite recent clarifications by central banks that it is indeed *commercial banks* that are the main creators of the money supply, money creation processes remain as confusing and opaque as ever to many. This article develops a simplified macro-visual diagram of today's money system based on the increasingly accepted “credit theory” of money creation. It aims to explain not only how money is created and which institutions have the authority to create it; it also aims to discuss the implications of this understanding of money creation for wider issues, such as political sovereignty, inequality, and socio-economic development. Ultimately, it aims to provide a pedagogical resource upon which both technical and normative discussions about our current money system among academics, activists, and students can be based.

Keywords: Credit theory of money; economic sociology; macroeconomics; monetary institutions; money creation

3. Ihrig, J., & Wolla, S. (2022). Let's close the gap: Updating the textbook treatment of monetary policy. *The Journal of Economic Education*, 53(3), 232–249. <https://doi.org/10.1080/00220485.2022.2075509>

Abstract: The topic of the Federal Reserve's (the Fed's) implementation of monetary policy has a significant presence in economics textbooks. Unfortunately, as the Fed purposefully shifted the way it implements monetary policy to an environment with ample reserves in the banking system, many textbooks have not kept up. The authors

walk through the key policy tools the Fed uses to implement policy in the ample-reserves regime. Next, they contrast the current framework with the pre-2009 regime to highlight that there are substantial differences in the policy tools and concepts that should be taught in the classroom. Finally, they review six, 2020 or 2021 edition, principles of economics textbooks and quantify how well they cover the key concepts associated with the way the Fed implements policy.

Keywords: Economic education; Federal Reserve; introductory economics; macroeconomics; monetary policy

4. Marshall, E. C., & Underwood, A. (2022). Is economics STEM? Process of (re)classification, requirements, and quantitative rigor. *The Journal of Economic Education*, 53(3), 250–258. <https://doi.org/10.1080/00220485.2022.2075508>

Abstract: From 2012 to 2019, the proportion of undergraduate economics degrees denoted as “Econometrics and Quantitative Economics” (STEM-eligible) conferred annually increased from 1 percent to 22 percent. The authors present results from a survey of the 73 institutions conferring at least one STEM-eligible economics degree in 2017 or 2018. They find that most institutions (59%) offer both traditional and STEM-eligible degrees and report needing departmental, college/university committee, and provost/dean approval to (re-)classify. The main motivation for this change is maintaining consistency with an increasingly quantitative discipline (73%). The significant differences in requirements between STEM-eligible and traditional economics degrees are the proportion requiring single variable calculus (91% vs. 69%), multivariable calculus (70% vs. 31%), linear algebra (48% vs. 21%), basic econometrics (96% vs. 77%), and advanced econometrics (48% vs. 8%).

Keywords: Quantitative methods, STEM, undergraduate economics education

5. Al-Bahrani, A. (2022). Classroom management and student interaction interventions: Fostering diversity, inclusion, and belonging in the undergraduate economics classroom. *The Journal of Economic Education*, 53(3), 259–272. <https://doi.org/10.1080/00220485.2022.2075507>

Abstract: The economics profession lacks diversity and, as a result, interventions have been introduced at the graduate and professional levels to minimize the effect of the “leaky pipeline.” In addition, economic educators lack training in classroom management and student interaction, which may lead to underinvestment in fostering diversity, inclusion, and a belonging environment in the classroom. The author of this article presents low-cost interventions to increase diversity and inclusion by developing a sense of belonging at the principles level. The focus of these interventions is on faculty behavior and pertains to classroom management and student interactions.

Keywords: Classroom management; diversity; economics education; professional development; underrepresented minorities; women

6. Siegfried, J. J. (2022). Trends in undergraduate economics degrees, 2001–2021. *The Journal of Economic Education*, 53(3), 273–276. <https://doi.org/10.1080/00220485.2022.2075511>

Abstract: Undergraduate economics degrees awarded by U.S. colleges and universities were stagnant from 2010 (2009–2010) to 2013, increased almost 14% from 2013 to 2015, and have subsequently stabilized at a little above the 2015 level.

Keywords: Undergraduate economics degree

JOURNAL OF EDUCATIONAL MEASUREMENT

1. Baldwin, P., & Clauser, B. E. (2022). Historical Perspectives on Score Comparability Issues Raised by Innovations in Testing. *Journal of Educational Measurement*, 59(2), 140–160. <https://doi.org/10.1111/jedm.12318>

Abstract: While score comparability across test forms typically relies on common (or randomly equivalent) examinees or items, innovations in item formats, test delivery, and efforts to extend the range of score interpretation may require a special data collection before examinees or items can be used in this way—or may be incompatible with common examinee or item designs altogether. When comparisons are necessary under these nonroutine conditions, forms still must be connected by *something* and this article focuses on these form-invariant connective *somethings*. A conceptual framework for thinking about the problem of score comparability in this way is given followed by a description of three classes of connectives. Examples from the history of innovations in testing are given for each class.

2. Puhan, G., & Kim, S. (2022). Score Comparability Issues with At-Home Testing and How to Address Them. *Journal of Educational Measurement*, 59(2), 161–179. <https://doi.org/10.1111/jedm.12324>

Abstract: As a result of the COVID-19 pandemic, at-home testing has become a popular delivery mode in many testing programs. When programs offer at-home testing to expand their service, the score comparability between test takers testing remotely and those testing in a test center is critical. This article summarizes statistical procedures that could be used to evaluate potential mode effects at both the item level and the total score levels. Using operational data from a licensure test, we also compared linking relationships between the test center and at-home testing groups to determine the reporting score conversion from a subpopulation invariance perspective.

3. Jones, P., Tong, Y., Liu, J., Borglum, J., & Primoli, V. (2022). Score Comparability between Online Proctored and In-Person Credentialing Exams. *Journal of Educational Measurement*, 59(2), 180–207. <https://doi.org/10.1111/jedm.12320>

Abstract: This article studied two methods to detect mode effects in two credentialing exams. In Study 1, we used a “modal scale comparison approach,” where the same pool of items was calibrated separately, without transformation, within two TC cohorts (TC1 and TC2) and one OP cohort (OP1) matched on their pool-based scale score distributions. The calibrations from all three groups were used to score the TC2 cohort, designated the validation sample. The TC1 item parameters and TC1-based thetas and pass rates were more like the native TC2 values than the OP1-based values, indicating mode effects, but the score and pass/fail decision differences were small. In Study 2, we used a “cross-modal repeater approach” in which test takers who failed their first attempt in one modality took the test again in either the same or different modality. The two pairs of repeater groups (TC → TC: TC → OP, and OP → OP: OP → TC) were matched exactly on their first attempt scores. Results showed increased pass rate and greater score variability in all conditions involving OP, with mode effects noticeable in both the TC → OP condition and less-

strongly in the OP → TC condition. Limitations of the study and implications for exam developers were discussed.

4. Liu, J., & Becker, K. (2022). The Impact of Cheating on Score Comparability via Pool-Based IRT Pre-equating. *Journal of Educational Measurement*, 59(2), 208–230. <https://doi.org/10.1111/jedm.12321>

Abstract: For any testing programs that administer multiple forms across multiple years, maintaining score comparability via equating is essential. With continuous testing and high-stakes results, especially with less secure online administrations, testing programs must consider the potential for cheating on their exams. This study used empirical and simulated data to examine the impact of item exposure and prior knowledge on the estimation of item difficulty and test taker's ability via pool-based IRT preequating. Raw-to-theta transformations were derived from two groups of test takers with and without possible prior knowledge of exposed items, and these were compared to a criterion raw to theta transformation. Results indicated that item exposure has a large impact on item difficulty, not only altering the difficulty of exposed items, but also altering the difficulty of unexposed items. Item exposure makes test takers with prior knowledge appear more able. Further, theta estimation bias for test takers without prior knowledge increases when more test takers with possible prior knowledge are in the calibration population. Score inflation occurs for test takers with and without prior knowledge, especially for those with lower abilities.

5. Moses, T. (2022). Linking and Comparability across Conditions of Measurement: Established Frameworks and Proposed Updates. *Journal of Educational Measurement*, 59(2), 231–250. <https://doi.org/10.1111/jedm.12322>

Abstract: One result of recent changes in testing is that previously established linking frameworks may not adequately address challenges in current linking situations. Test linking through equating, concordance, vertical scaling or battery scaling may not represent linkings for the scores of tests developed to measure constructs differently for different examinees, or tests that are administered in different modes and data collection designs. This article considers how previously proposed linking frameworks might be updated to address more recent testing situations. The first section summarizes the definitions and frameworks described in previous test linking discussions. Additional sections consider some sources of more disparate approaches to test development and administrations, as well as the implications of these for test linking. Possibilities for reflecting these features in an expanded test linking framework are proposed that encourage limited comparability, such as comparability that is restricted to subgroups or to the conditions of a linking study when a linking is produced, or within, but not across tests or test forms when an empirical linking based on examinee data is not produced. The implications of an updated framework of previously established linking approaches are further described in a final discussion.

JOURNAL OF HUMANISTIC PSYCHOLOGY

1. McEwan, O., McDermott, M. R., & Hefferon, K. (2018). Modelling Everyday Understandings of Mortality: A Qualitative Enquiry. *Journal of Humanistic Psychology*, 62(5), 627–652. <https://doi.org/10.1177/0022167818787908>

Abstract: With few exceptions, much of the literature on mortality awareness (MA; the realization of one's own and other's mortality), though based on quantitative research, is focused on its negative effects and processes associated with fearing its occurrence. However, recent studies have demonstrated that MA is multifaceted and can be associated with positive processes and outcomes. Here, everyday understandings of MA were investigated using grounded theory. Ten participants engaged in one-off semi-structured interviews about their everyday experiences of MA. Grounded theory analysis revealed four main themes: (a) *Moments of MA*, (b) *Functionality of MA*, (c) *Coping strategies for MA*, and (d) *Inability to cope with MA*. Each of these themes is composed of two to five subthemes. The results supported the notion that MA is experienced in a multidimensional manner, which appears to align with elements of the Multidimensional Mortality Awareness Measure and Model. Furthermore, positive and/or negative outcomes appeared to depend on the function attributed to MA by the individual. Therefore, the ability to attribute such function to MA appears to be important in our understanding of this key existential issue.

Keywords: mortality awareness, qualitative, growth

2. Gnaulati, E. (2018). Overlooked Ethical Problems Associated With the Research and Practice of Evidence-Based Treatments. *Journal of Humanistic Psychology*, 62(5), 653–668. <https://doi.org/10.1177/0022167818800219>

Abstract: Proponents of evidence-based treatments (EBTs) have directed complaints of potential unethical practice against psychotherapists who refrain from using EBTs as first-line interventions for a range of psychiatric disorders on the grounds that these treatments should be given priority because of their exceptional scientific backing. This article counters these claims and highlights core ethical concerns associated with the research and practice of EBT itself; namely, the appropriateness of saturating the field with short-term models of psychotherapy and the questionable assumption that these can yield meaningful and lasting change; the uncertain relevance of the results of EBT investigations for psychotherapists working with real-world clients; the foreclosure of opportunities to address clients' unmet developmental needs and self-fragility posed by the directive/didactic therapeutic stance inherent in EBTs; and, the reduced quality of psychotherapy offered to the public at large and threats to the clinical competence of early-career mental health professionals caused by overemphasizing training in EBTs over the acquisition of relational skills in graduate schools and postgraduate training sites.

Keywords: ethics, clinical psychology, relational psychotherapy.

3. Orille, A. C., Marton, V., & Taku, K. (2020). Posttraumatic Growth Impacts Views of Others' Trauma: The Roles of Shared Experience and Gender. *Journal of Humanistic Psychology*, 62(5), 669–682. <https://doi.org/10.1177/0022167820961928>

Abstract: Posttraumatic growth (PTG) may foster skills that allow one to understand traumatic experiences in others. The primary aim of this study was to determine the relationship between an individual's PTG reports and their ability to relate to two growth types, PTG and illusory growth. The purpose of this study was to elucidate perceptions of illusory growth and PTG so clinicians may more readily identify catalysts for growth and customize treatments. Participants were read two vignettes that detailed the experience of PTG and illusory growth as a result of a specific traumatic event (i.e., car accident). They completed a questionnaire regarding their perceptions of the vignettes. Results revealed that participants with higher PTG were more likely to relate to the PTG vignette than the illusory growth vignette, and when participants had experienced the same event in the vignette (i.e., car accident), this relationship was stronger. Last, participants mostly perceived the PTG vignette as female, and the illusory growth vignette as male. Our results suggest that interventions following traumatic experiences could be best facilitated/supplemented by reflective interactions with others who have experienced similar events. Considering one's gender may be important in order to ensure that gender stereotypes regarding emotional expression are mitigated.

Keywords: posttraumatic growth, illusory growth, vignettes, relatability

4. Joseph, S. (2021). Psychological Formulation, a Critical Viewpoint: Illness Ideology in Disguise. *Journal of Humanistic Psychology*, 62(5), 683–693. <https://doi.org/10.1177/0022167820985411>

Abstract: Recent years have seen a surge of interest by clinical psychologists in the idea of psychological formulation. Interest in this idea has also been shown by humanistic psychologists as evidenced by a recent issue of this journal, in which formulation is offered as a possible antidote to diagnosis. In this article, I examine the idea of formulation from the viewpoint of client-centered therapy, offering a critical perspective and concluding that as formulation is ultimately about identifying a specific pathway for a specific problem, it continues to subtly promote a medical ideology, incompatible with client-centered therapy.

Keywords: formulation, client-centered therapy, illness ideology, medical model, diagnosis.

5. Gantt, E. E., & Williams, R. N. (2020). The Triumph of the Will: Evolutionary Psychology and the Conceptual Incoherence of Enhancement. *Journal of Humanistic Psychology*, 62(5), 694–717. <https://doi.org/10.1177/0022167819899009>

Abstract: Recent decades have witnessed a profound increase in scholarly work and scientific research conducted under the banner of evolutionary psychology. Although evolutionary psychologists typically disavow any historical or conceptual link to the political or scientific project of eugenics, or at the very least downplay the current relevance of such linkages, a growing number of evolutionary thinkers have begun to embrace a biological science of cognitive and moral enhancement. This article examines some of the ways in which advocates of enhancement assume human agency as central to their project even as their naturalistic explanations of human behavior deny that agency. The article also argues that the utopian moral project that

animates the evolutionary enhancement movement is undercut by the materialist metaphysics that undergirds the neo-Darwinian worldview employed to ground the project in the first place, a metaphysics that relativizes and ultimately rejects any meaningful morality or moral endeavor whatsoever.

Keywords: evolutionary psychology, enhancement, emergence, eugenics, agency

6. Ribeiro, E., Gonçalves, M. M., & Santos, B. (2018). How Reconceptualization of the Self Is Negotiated in Psychotherapy: An Exploratory Study of the Therapeutic Collaboration. *Journal of Humanistic Psychology*, 62(5), 718–747. <https://doi.org/10.1177/0022167818792123>

Abstract: This case study explores the collaboration that occurs between therapist and client when reconceptualization innovative moments emerge. Reconceptualization innovative moments are exceptions to the problematic self-narrative that brought the client to therapy and are associated with successful psychotherapy. Reconceptualization innovative moments have two main components: a contrast between a past problematic facet and a current, more adjusted one (e.g., before I did/thought/felt X . . . , now, I do/think/feel Y) and an attribution for what allowed this transformation to occur (e.g., this was possible because I realized Z). The collaboration between therapist and client was analyzed using the Therapeutic Collaboration Coding System, which conceptualizes the relationship as collaborative or as noncollaborative. The majority of interactions in this case were clearly collaborative, with the therapist and client working inside the therapeutic zone of proximal development, which is typical of successful psychotherapy cases. Reconceptualization innovative moments begin with collaborative exchanges in which the therapist supported the problem and the client elaborated on the change afterward. Implications of these findings for change in psychotherapy are discussed.

Keywords: therapeutic collaboration, reconceptualization innovative moment, emotion-focused therapy, case study

7. Conde, R., Gonçalves, R. A., & Manita, C. (2018). Narratives of Those Who “Love” Violently: Identity Issues and Construction of Meaning of the Batterers. *Journal of Humanistic Psychology*, 62(5), 748–769. <https://doi.org/10.1177/0022167818784989>

Abstract: The present study aims to identify and analyze the interpretative repertoires on love and intimate relationships used by wife batterers, exploring how the repertoires may influence the development and experience of violent intimate relationships, and how this is linked to the identity issues. Twelve wife batterers participated in the study, answering to an individual interview on their lives’ love story. Through a discourse analysis of the data, five distinct interpretative repertoires were identified—romantic, companion, passionate, pragmatic and game-playing love—and their meaning construction was analyzed. It is discussed what repertoires reveal about gender roles prescribed by the model of masculinity, and how these gender roles constrain the construction of the identity, the personal growth and the self-actualization of the batterers.

Keywords: love, intimate violence, wife batterers, repertoires, identity

8. Firestone, R. W., & Solomon, S. (2018). Separation Theory: Sheldon Solomon Interview With Robert Firestone. *Journal of Humanistic Psychology*, 62(5), 770–782. <https://doi.org/10.1177/0022167818796881>

Abstract: In this interview, clinical psychologist Robert Firestone responds to questions from terror management theorist and researcher Sheldon Solomon regarding the basic concepts in separation theory, an approach that integrates psychoanalytic and existential systems of thought. The topics under discussion include an explanation of the core conflict in life, a description of the fantasy bond, the critical inner voice, Voice Therapy, a cognitive/affective/behavioral methodology that focuses on accessing emotions in countering clients' destructive thoughts and attitudes, and a case study illustrating the methods applied in individual psychotherapy. There is also a discussion of the “kinds of challenges that people are confronted with today” as contrasted to the past.

Keywords: clinical psychology, death anxiety, existential psychotherapy, personal narratives

JOURNAL OF SPECIAL NEEDS EDUCATION

1. Myklebust, J. O., & Båtevik, F. O. (2021). Special needs provision and economic independence among young adults with disabilities: A longitudinal study. *European Journal of Special Needs Education*, 37(5), 715–728. <https://doi.org/10.1080/08856257.2021.1974552>

Abstract: This study, inspired by a life course approach, examines how former students with special educational needs that were met with different types of support, succeed in finding employment with sufficient pay to sustain livelihood and, thus, made themselves economically independent. The individuals in the sample (N = 295) are a part of a Norwegian research project that has lasted for 20 years. The study participants' difficulties and their special needs and the provision made to meet those needs were recorded when they were 16–17 years old. Beyond their teens, they reported the information about themselves every fifth year until their mid-thirties. At that age, more than half were economically independent. Logistic regression analysis revealed that independent variables in the analytic model influence economic independence in various ways. The main conclusion was that the use of teacher assistants and much special pedagogical teaching do not contribute to long-term economic independence. Other factors, including changes in the life course after leaving secondary school, vocational or academic competence registered when the individuals were in their late twenties and the birth of their first child seem to be of greater importance. Yet other factors, such as gender and functional level seem to be decisive.

Keywords: Special educational needs, special needs provision, economic independence, life course, longitudinal research

2. Moriña, A., & Biagiotti, G. (2021). Academic success factors in university students with disabilities: a systematic review. *European Journal of Special Needs Education*, 37(5), 729–746. <https://doi.org/10.1080/08856257.2021.1940007>

Abstract: This study provides a systematic review of the literature on what factors university students with disabilities recognise as necessary for their academic success. This systematic review was conducted in ERIC, Scopus and Web of Science. The opinions of 3854 students in a total of 31 qualitative and quantitative studies were analysed through a system of categories and codes. The results were organised according to the description of the studies (type of methodology, country and type of disability) and personal and external factors favouring success. Among the personal factors of students with disabilities who progress and remain at university, self-advocacy, self-awareness, self-determination, self-esteem and executive functioning stood out. Regarding external factors, the following were identified: family, disability offices, staff and faculty members, and peers that influence their academic success. This paper includes significant findings that universities can use to develop actions that promote the development of some of the factors identified in this study, thus favouring the learning and academic success of students with disabilities.

Keywords: Academic success factors, students with disabilities, university, systematic review

3. de la Herrán Gascón, A., Rodríguez Herrero, P., Peralta, I. R., & Rodríguez, J. J. M. (2021). The Pedagogy of death and special needs education. A phenomenological study. *European Journal of Special Needs Education*, 37(5), 747–760. <https://doi.org/10.1080/08856257.2021.1943269>

Abstract: There are very few studies relating the Pedagogy of Death to special needs education. The objective of this study was to explore perceptions of death education among the special school educational community. The study adopted a qualitative, phenomenological design, using interviews and discussion groups to encourage the emergence of participants' perceptions and understandings of death education in schools. 22 staff members and parents from 2 special schools took part. The main results were: participants had favourable attitudes towards death education in schools; educators lacked training in the Pedagogy of Death; planned educational responses to death were absent in schools; death had significant impact in special schools; and the positive aspects of special needs education could be transferred to ordinary education. The conclusions stress the need to train educators and parents and to include death in the education offered at special schools, in an individualised and personalised way.

Keywords: Pedagogy of death, death education, special schools, phenomenology

4. Bahdanovich Hanssen, N., & Erina, I. (2021). Parents' views on inclusive education for children with special educational needs in Russia. *European Journal of Special Needs Education*, 37(5), 761–775. <https://doi.org/10.1080/08856257.2021.1949092>

Abstract: The present study focuses on exploring parents' views of inclusive education for children with special educational needs (SEN) in Russia. First, we bring parents' voices to the forefront, exploring their points of view on inclusive education for their SEN children. Second, we deepen the current understanding of what aspects are important— from a parental perspective— in the provision of education for children with SEN in an inclusive school context. The research was designed as an exploratory study, and data were gathered by means of a qualitative online questionnaire. Using thematic analysis, two main themes were identified: parental views on inclusive education for children with SEN and important factors in the provision of education for children with SEN in an inclusive context. The results show that parents' opinions about inclusive education for their children with SEN reveal obvious tensions. The findings point to teacher proficiency, parental involvement and humanity as being essential to the education of children with SEN, allowing them to evolve and thrive in inclusive school settings. Russia needs to increase its focus on parental involvement in fostering inclusive education and strengthen adequate preparation of teachers to improve the education provided for children with SEN in an inclusive context.

Keywords: Inclusive education, parental involvement, special educational needs, Russia

5. Berasategi Sancho, N., Idoiaga Mondragon, N., Dosil Santamaria, M., & Picaza Gorrotxategi, M. (2021). The well-being of children with special needs during the COVID-19 lockdown: academic, emotional, social and physical aspects. *European Journal of Special Needs Education*, 37(5), 776–789. <https://doi.org/10.1080/08856257.2021.1949093>

Abstract: Although COVID-19 is being disruptive to all children, the effects are stronger for children with disabilities. Therefore, the aim of this study was to analyse, from a holistic perspective, the well-being of children with special needs during the total lockdown period in Spain. The ‘Well-being of Children in Lockdown’ (WCL) scale was completed by 1225 parents of which 3.1% (n = 38) had children with special needs. The results reveal the emergence of negative emotions among children with special needs, who were found to be crying more, feeling more nervous than usual, getting more angry and feeling sadder. These children also have more unhealthy habits, eat more than usual, overuse new technology and watch too many TV. Children with special needs scored lower for general well-being than those without these needs, and scored lower also for emotional aspects, playful and creative activities and physical activity.

Keywords: Children, COVID-19, disability, lockdown, well-being

6. Isaak, R. C., Kleinert, S. I., & Wilde, M. (2021). Learning strategies of students with and without emotional and behavioural disorders in primary school. *European Journal of Special Needs Education*, 37(5), 790–803. <https://doi.org/10.1080/08856257.2021.1954344>

Abstract: Learning strategies can be powerful learning tools. Some studies show that even primary school students use them. However, hardly any studies have investigated the use of learning strategies of students with special needs, especially for those with emotional and behavioural disorders, in primary schools. Thus, in the present study we examined whether students with special needs in emotional and behavioural disorders use learning strategies and whether their use differs from that of students without special needs. The sample consisted of 101 second, third, and fourth grade students ($M_{\text{age}} = 9.41$; $SD = .86$; 100% male), 44 of which were students with and 57 students without emotional and behavioural disorders. We used a questionnaire to measure the self-reported learning strategy use. Results revealed significant differences in rehearsal, organisation, elaboration, and effort in favour of the students without emotional and behavioural disorders. There were no significant differences regarding time management. Hence, future research is needed to investigate how students with special needs can improve their learning strategy use.

Keywords: Learning strategies, students with special needs, Emotional and Behavioural Disorders (EBD), primary school

7. Stranghöner, D., Wild, E., & Schwinger, M. (2021). Identifying predictors of performance in reading and writing in primary students with mild learning difficulties. *European Journal of Special Needs Education*, 37(5), 804–818. <https://doi.org/10.1080/08856257.2021.1954345>

Abstract: Although numerous studies have reported the predictive power of various factors for academic performance in regular students, little is known about the predictive power of students with Special Educational Needs (SEN). In the present study, we investigated the relative importance of thoroughly selected factors like prior performance, intelligence, ability self-concept, domain-specific interest, gender, migration background, and school setting for reading and writing (literacy) performance of students with mild learning difficulties (MLD). Data from a

representative German sample of elementary school children with MLD were examined. Our results revealed that prior performance, school setting, intelligence, and ability self-concept were significant predictors for performance in literacy. Relative weights did not differ significantly between different types of schooling. Our findings mostly resemble former research on regular students.

Keywords: Inclusive education, mild learning difficulties, intelligence, ability self-concept, relative weights analysis

8. Franck, K. (2021). The educational context in expert assessments. A study of special education documents of children in ECEC institutions. *European Journal of Special Needs Education*, 37(5), 819–833. <https://doi.org/10.1080/08856257.2021.1954346>

Abstract: The aim of this study was to critically examine how expert assessment documents describe and assess the early childhood education and care (ECEC) context in reports about a child's need for special educational support. Adhering to a shift towards inclusive education, the focus is on how educational-psychological services assess, or fail to assess for, potential shortcomings in the educational environment. The study is based on in-depth document-analysis of 23 expert assessments of children with 1–10 weekly hours of special educational support in various ECEC institutions in Norway. The analysis outlines five different ways in which expert assessments refer to the educational context: from concealing, separating, situating the child in, accentuating, to critically assessing the ECEC context. The results illustrate how assessments at times refer to the ECEC context in, for example, descriptions of a child's behaviour during routine activities or providing information about the institutions organisational qualities and practices. However, the documents hardly ever discuss potential shortcomings of the ECEC context.

Keywords: Special needs, individual education plans, system-oriented approach, educational-psychological services inclusion

9. Schwab, S., Lindner, K. T., Helm, C., Hamel, N., & Markus, S. (2021). Social participation in the context of inclusive education: primary school students' friendship networks from students' and teachers' perspectives. *European Journal of Special Needs Education*, 37(5), 834–849. <https://doi.org/10.1080/08856257.2021.1961194>

Abstract: Having friends influences students' academic, socio-emotional as well as health development. Especially, students with special educational needs (SEN) are at a high risk to belong to the subgroup of students without friends in class. Within a sequential explanatory design, two study phases have been implemented in the present study. In phase 1, a sociometric network analysis of 449 students from 25 inclusive primary school classes (4th grade, age = 9–11 years) were examined at t1. To assess students' friendships, sociometric nominations of the students' top five friends have been used. Results showed that the agreement of students' and teachers' rating varies strongly across classes ($r = .18 - .71$). In phase 2, interview data from a subsample (a sub-sample selected from phase 1) comprising teachers ($n = 2$) and students ($n = 15$) was qualitatively analysed. The evaluation of teachers' interviews identified three explanations for missing accuracy in the sociometric networks. From students' interviews, six subcategories describing friendship were found.

Keywords: Social networks, friendships, teacher attunement, interrater agreement, inclusive education

10. Guillemot, F., & Hessels, M. G. (2021). Validation of the student version of the Perceptions of Inclusion Questionnaire on a sample of French students. *European Journal of Special Needs Education*, 37(5), 850–865. <https://doi.org/10.1080/08856257.2021.1961195>

Abstract: The Perceptions of Inclusion Questionnaire (PIQ) measures emotional well-being at school, social inclusion, and academic self-concept of students aged 9 to 15 years, with and without Special Educational Needs (SEN). This study aimed to validate the PIQ with French students in 6th grade. The sample included 288 students with an average age of 11 years and 4 months. Confirmatory factor analyses supported construct validity of the 3-factors. Correlations with tests already validated in French were between .41 and .60, which demonstrate the convergent validity of the different domains of the PIQ. Internal consistency and test-retest reliability are quite satisfactory (Cronbach's $\alpha > .70$ and $r > .73$). The strict scalar invariance of the scale was verified according to gender. Furthermore, differential analyses according to gender and the presence of SEN revealed that girls show a slightly higher emotional well-being than boys and that students with SEN have a significantly lower academic self-concept than students without SEN. No other significant differences regarding gender and SEN were found. It was concluded that the French student-version of the PIQ has good psychometric properties and can be used as a simple tool for measuring inclusion of pupils with and without SEN.

Keywords: Inclusion, student perceptions, school well-being, social inclusion, academic self-concept, perceptions of inclusion questionnaire, special educational needs

11. Schürer, S., & van Ophuysen, S. (2021). Relationship between group cohesion and social participation of pupils with learning and behavioural difficulties. *European Journal of Special Needs Education*, 37(5), 866–881. <https://doi.org/10.1080/08856257.2021.1963150>

Abstract: Current research has established that inclusive schooling alone cannot ensure the social participation of all children – a central goal of inclusive education. Therefore, this study examines whether the participation of students is dependant on the type of difficulty they experience (learning vs. behavioural) and the degree of class cohesion. Psychometric and sociometric instruments were used to operationalise participation (reciprocal relationships, self-perceived acceptance) and cohesion. Standardised achievement data and teacher assessments of behavioural problems are available for each of the second/third-grade respondents (N = 1025, 46 classes). The data was analysed using multi-level regression analyses. Our results indicate that especially children with behavioural problems represent a risk group in regards to social participation. Class cohesion was positively associated with social participation. The results are discussed with regard to implications for school practice.

Keywords: Social participation, cohesion, inclusion, special educational needs, primary school

12. Tiernan, B. (2021). Inclusion versus full inclusion: implications for progressing inclusive education. *European Journal of Special Needs Education*, 37(5), 882–890. <https://doi.org/10.1080/08856257.2021.1961197>

Abstract: Inclusive education is a contentious concept with opposing opinions on what constitutes inclusion. This paper examines the concept of inclusive education, focusing on the distinction between inclusion and full inclusion, with a view to contributing to the ongoing discussion about the future direction of the Irish educational system. As a result of the 2018 ratification of the United Nations Convention on the Rights of Persons with Disabilities (UNCRPD), inclusive education in Ireland is at a pivotal juncture. The paper proposes that key to successful development of inclusive education is a pragmatic understanding of full inclusion, which supports the inclusion of students with their peers in the mainstream classroom setting but, critically, does not limit where specialised interventions and supports can occur in the school setting.

Keywords: Inclusive education, inclusion, full inclusion, irish educational system

LIBRARY HERALD

1. Ramakrishna, Kumar, P., Kattimani, P. S., & Ramesha, J. (2022). Research publications of prof. C.N.R. Rao over the period of 20 years from 2001–2020: a study. *Library Herald*, 60(3), 1–11. <https://doi.org/10.5958/0976-2469.2022.00025.2>

Abstract: The study aims to find out the publication details of Prof. C N R Rao which has been indexed under the Web of Science database over the period of 20 Years from 2001 to 2020. The methodology adopted for the present research study is scientometrics tools such as authorship pattern and collaboration, degree of collaboration, and citations. The study has revealed that a total of 371 publications contributed by Prof. CNR Rao in collaboration up to the end of the year 2009, no one publications are indexed in the web of science contributed by CNR after 2009. The highest 305 publications are articles were published in journals and a maximum of 125 publications was in three authorship patterns. He has contributed most of his (72.24%) publications in the field of chemistry. The mean value of the Degree of Collaboration is 0.97.

Keywords: Scientometrics, C N R Rao, Chemistry, Physics, Material Science, Science and Technology.

2. Sharma, P., & Karuna. (2022). E-learning practices during Covid-19 in MDU, Rohtak, Haryana: A case study. *Library Herald*, 60(3), 12–24. <https://doi.org/10.5958/0976-2469.2022.00026.4>

Abstract: The entire world has gone through tremendous transformation due to the COVID -19 Pandemic in the previous year particularly. The educational institutions were no more an exception; rather they accepted the challenge and started delivering through online mode completely in the previous years. Therefore, the researchers intend to read and analyze the effectiveness of various e-learning methods followed during this period by Department of Library & Information Science (DLIS), Maharshi Dayanand University Rohtak to provide uninterrupted LIS education from the student's point of view. This is further focused to know the platforms utilized, issues faced by the students (including the students from rural part of Haryana) and their expectations and satisfaction level about on-line education.

Keywords: E-learning, Covid-19, LIS Education, Online Learning Expectations.

3. Abayomi, O. K., Nduka, N. C., Bosede, A. T., Odunola, A. I., & David, O. B. (2022). Adoption and use of nursing informatics among nurses in Nigeria. *Library Herald*, 60(3), 25–38. <https://doi.org/10.5958/0976-2469.2022.00027.6>

Abstract: The paper examined the adoption and use of nursing informatics among nurses in Nigeria. The paper is a survey research anchored on the positivism research paradigm. The Technology Acceptance model was used to underpin the study. The population of the study is 150 nurses from three purposively selected hospitals in the country. The hospitals were selected because they have necessary ICT resources and human resources to operate nursing informatics technologies. Simple random sampling was used to select 30 nurses from each of the hospitals. Questionnaire was used as data collection instrument. The findings revealed that mobile health

technology is the most used nursing informatics and prevention of medical errors is the main reason for using nursing informatics among nurses. Perceived usefulness and perceived ease of use influence the nurses to use the technologies. The study recommended that the hospitals managements should make funds available in order to have modern days nursing informatics. Furthermore, in design or making of technologies for nurses' usability, the technologies should be user-friendly and easy to use for effective medical practices. However, the research joined the discussion and validations of TAM and nursing informatics in the context of Nigeria. According to the researchers' understanding, this study appears to be the first of its sort to examine TAM and nursing informatics in Nigeria. The study also adds to the body of knowledge and offers new information on the significance of nursing informatics for decision-makers in Nigerian healthcare facilities

Keywords: Adoption, Use, Nursing, informatics, Nigeria

4. Das, T. K., & Ray, P. (2022). Scientific research productivity of Visva-Bharati: A bibliometric study. *Library Herald*, 60(3), 39–50. <https://doi.org/10.5958/0976-2469.2022.00028.8>

Abstract: The present study attempts to analyse the research output of science departments (n=22) of Visva-Bharati university during the last 21 years (2000-2020) as reflected in the Web of Science (WoS) database and identifies 4016 number of articles. The study examines the growth rate of publications, citation impact, collaboration trend at different levels, department wise publication, preferred source journals, identification of productive authors and tried to apply of the 80–20 rule of publication. Fluctuating trend of publication has been observed in the overall publications productivity with a Compound Annual Growth Rate (CAGR) of 13.42 percent. Over 90 percent of articles have received citations, out of which the international collaborative publications have cited maximum. The Journal of High Energy Physics and Journal of Instrumentation have been found as the most preferred and most cited journal respectively.

Keywords: Research Impact, Research Productivity, Web of Science (WoS), Research Progress, Visva-Bharati.

5. Das, T. K., Behera, M., Makwana, J., & Shukla, A. (2022). Scientometric discovery of research contributions of the journal “nature climate change” during 2011–2020. *Library Herald*, 60(3), 51–67. <https://doi.org/10.5958/0976-2469.2022.00029.x>

Abstract: The study looks at the scientometric traits of the Nature Climate Change (NCC) journal and the papers that were extracted from the Scopus database between 2011 and 2020. The analysis and visualisations for the study were done using RStudio and VOSviewer. The analysis indicated an upward trend in the number of publications in NCC from 2011 to 2020; carbon emissions, climate change, global warming, greenhouse gases, and carbon dioxide were the key research topics; the top authors were from the United States and the United Kingdom. Since the study depends on information obtained from the Scopus database, any database limitations may have an impact on the results of the study.

Keywords: Bibliographic Coupling, Citation Analysis, Country Collaboration, Co-authorship Pattern, Co-citation, Keyword Co-occurrence, RStudio, Scopus, Scientometrics, VOSviewer

6. Kumar, R., & Khan, S. (2022). Quality in library services - A literature review study. *Library Herald*, 60(3), 68–87. <https://doi.org/10.5958/0976-2469.2022.00030.6>

Abstract: The current study is part of a wider research project called “Quality in Library Services: A Study of Management Institutions in Noida and Ghaziabad Regions of Delhi NCR,” which includes the literature review and brief analysis of the existing literature. The authors attempted to find previously published research works on Quality in Library Services from various viewpoints, with a focus on the Indian setting. As part of the methodology for this literature review study, all relevant sources of literature were consulted, particularly secondary sources such as articles from journals, magazines, conference proceedings, websites, and/or blog posts. The literature review includes published books, theses, and dissertations to provide a comprehensive overview of the prior research on the subject. A review of the available literature is done in order to comprehend the main conclusions and to provide the direction to further research. The authors discovered that a lot of research has been done on total quality management possibilities and challenges, as well as numerous service models. The library offers a wide selection of excellent books. The current study will provide new thrust issues for aspiring scholars to focus on and serve as an exhaustive background study on the quality of library services.

Keywords: Quality, Library Services Quality, Quality in Library Services, Comparison of Quality Services in Libraries, Literature Review.

7. Mondal, D., & Chakrabarti, B. (2022). Research contribution and impact of Indian institutes of science education and research (iisers) to physical sciences. *Library Herald*, 60(3), 88–105. <https://doi.org/10.5958/0976-2469.2022.00031.8>

Abstract: The present study explores the research contribution of five selected Indian Institutes of Science Education and Research (IISERs) in the discipline of physical sciences over the last 15 years period, 2006–2020. The selected five IISERs published a total of 3,354 research articles which comprise 47.34% share of internationally co-authored articles. The publications are interpreted in terms of chronological growth, collaboration trend, focus sub-areas, scholarly communication channels, leading collaborating countries, keywords and citation impact. Among the selected IISERs, IISER-P followed by IISER-K and IISER-M were the major producers of research papers. Since 2016, a sharp rising trend in terms of publication output and international collaborative efforts was observed. Furthermore, the collaboration trend also witnessed that there were a strong international collaboration linkages among IISERs and developed countries like the USA, Germany and Italy were the primary collaborating countries. In addition, the international experimental research consortia like CMS, LIGO, VIRGO and BELLE Collaboration played a crucial role in global cooperative research efforts of IISERs.

8. Singh, S., & Kumar, M. (2022). Role of remote access solutions for accessing library resources: A panacea for sustainable access to legal databases during pandemic. *Library Herald*, 60(3), 106–124. <https://doi.org/10.5958/0976-2469.2022.00032.x>

Abstract: Physical access to libraries and information centers was obstructed due to nationwide lockdown as an outcome of the spread of corona virus. In this scenario, libraries played a pivotal in extending reference and research services to its clientele through various mechanisms. Remote access to electronic resources is one of such mechanisms. The present study is an attempt to know diverse patterns of accessing electronic resources through remote access software during pandemic by users of a Law University based in India namely National Law University Delhi (NLUD). The study also aims to analyze the frequency of referred electronic resources during pandemic on various parameters such as most referred legal database, maximum number of downloads, maximum number of logins, content based logins and downloads for various legal databases from the perspective of different user categories. The data for the present study has been extracted from the remote access software namely Remote Xs subscribed by the university. The Study finds that post graduate students are the major users among different user categories accessing the electronic resources through remote access mechanisms during the lockdown period. The study also reveals that among various electronic resource categories, the most popular category were e-journals. Apart from this, most referred Indian legal database was Manupatra and JSTOR was the most popular International legal database.

Keywords: Electronic Resources, Legal Databases, Remote Access, COVID 19, Law Library, Law University, NLUD.

9. Mondal, H. K., & Bhatt, R. K. (2022). Use of e-resources by research scholars and postgraduate students of University of Dhaka, Bangladesh: A study. *Library Herald*, 60(3), 138–155. <https://doi.org/10.5958/0976-2469.2022.00034.3>

Abstract: The aim of this paper is to examine the use of e-resources by research scholars and postgraduate students in University of Dhaka. An online survey was conducted among the participants to collect data. A link of the questionnaire was sent to the respondents through e-mails and the link also sent to a few faculty members with a request to circulate the questionnaire among the students and invite them to take part in this online survey. The purposes of the study are to investigate the reasons and level of awareness of using e-resources by both the research scholars and postgraduate students. The study also initiates to know the methods which they use to learn using these resources and the obstacles of reading and accessing them. The study explores the types of e-resources they prefer, their preferable format, the level of usefulness and satisfaction of the available e-resources in the University of Dhaka library. It is observed in the study that not only research scholars but also postgraduate students are aware of different types of e-resources and almost everyone uses them daily. The study revealed that self-instruction is the best method to learn using e-resources. The result showed that PDF is the most popular format and they use these resources for different purposes and there were some problems in library so that they did not use library e-resources.

Keywords: E-resources, Research Scholars, Postgraduate students, Library, University of Dhaka, Information, University of Dhaka Library, Bangladesh.

LANGUAGE LEARNING

1. Murakami, A., & Ellis, N. C. (2022). Effects of Availability, Contingency, and Formulaicity on the Accuracy of English Grammatical Morphemes in Second Language Writing. *Language Learning*, 72(4), 899–940. <https://doi.org/10.1111/lang.12500>

Abstract: We investigated whether the accuracy of grammatical morphemes in second language (L2) learners' writing is associated with usage-based distributional factors. Specifically, we examined whether the accuracy of L2 English inflectional morphemes is associated with the availability (i.e., token frequency) and contingency (i.e., token frequency relative to other forms with the same lemma) of the inflected word form as well as the formulaicity of the context in which it occurs (i.e., predictability of the form given the surrounding words). Data drawn from a large-scale learner corpus indicated that contingency is a robust predictor of morpheme accuracy, thereby supporting the usage-based view that language learners are sensitive to distributional properties in their input. Furthermore, the relationship of contingency with accuracy does not necessarily lessen when learners' proficiency rises. Contrary to previous research investigating online processing, we did not identify in our study availability and formulaicity as predictors of accuracy of morpheme production in writing.

Keywords: usage-based theories; contingency; grammatical morpheme; learner corpus

2. Lei, D., Liu, Y., & van Hell, J. G. (2022). Novel Word Learning With Verbal Definitions and Images: Tracking Consolidation With Behavioral and Event-Related Potential Measures. *Language Learning*, 72(4), 941–979. <https://doi.org/10.1111/lang.12502>

Abstract: We examined the impact of images on novel word learning and consolidation, in a conceptual replication of Liu and Van Hell (2020). After participants had learned one set of novel words with definitions and images on Day 1 (remote words) and a different set on Day 2 (recent words), they judged the semantic relatedness of word pairs on Days 2 and 8 while event-related potentials (ERPs) were recorded. Day 2 ERPs showed that remote, but not recent, novel words elicited a late positive component. By Day 8, both remote and recent novel words elicited a late positive component. We observed no N400 on either day. Comparing these learners (definition-image group) with learners trained with definitions only (using data from Liu & Van Hell, 2020) revealed that the groups' ERP patterns did not differ, but definition recall and relatedness judgment performances were higher for the definition-image group than for the definition-only group. Learning novel word meanings through definitions and images strengthened behavioral outcomes but did not affect ERP signatures of learning and consolidation.

Keywords: word learning; offline consolidation; semantic integration; event-related potentials (ERPs)

3. Palma, P., Marin, M., Onishi, K. H., & Titone, D. (2022b). Learning, Inside and Out: Prior Linguistic Knowledge and Learning Environment Impact Word Learning in Bilingual Individuals. *Language Learning*, 72(4), 980–1016. <https://doi.org/10.1111/lang.12501>

Abstract: Although several studies have focused on novel word learning and lexicalization in (presumably) monolingual speakers, less is known about how bilinguals add novel words to their mental lexicon. In this study we trained 33 English–French bilinguals on novel word-forms that were neighbors to English words with no existing neighbors. The number of novel neighbors to each English word varied, as did the cross-linguistic orthographic overlap between the English word and its French translation. We assessed episodic memory and lexicalization of the novel words before and after a consolidation period. Cross-linguistic similarity enhanced episodic memory of novel neighbors only when neighborhood density among the novel neighbors was low. We also found evidence that novel neighbors of English words with high cross-linguistic similarity became lexicalized after a consolidation period. Overall, the results suggest that similarity to preexisting lexical representations crucially impacted lexicalization of novel words by bilingual individuals.

Keywords: bilingualism; lexicalization; competition; cross-language similarity; neighborhood density; consolidation

4. Mathôt, S., & March, J. (2022). Conducting Linguistic Experiments Online With OpenSesame and OSWeb. *Language Learning*, 72(4), 1017–1048. <https://doi.org/10.1111/lang.12509>

Abstract: In this Methods Showcase Article, we outline a workflow for running behavioral experiments online, with a focus on experiments that rely on presentation of complex stimuli and measurement of reaction times, which includes many psycholinguistic experiments. The workflow that we describe here relies on three tools: OpenSesame/OSWeb (open source) provides a user-friendly graphical interface for developing experiments; JATOS (open source) is server software for hosting experiments; and Prolific (commercial) is a platform for recruiting participants. These three tools integrate well with each other and together provide a workflow that requires little technical expertise. We discuss, and illustrate through an example study, several challenges that are associated with running online experiments, including temporal precision, the implementation of counterbalancing, data quality, and issues related to privacy and ethics. We conclude that these challenges are real but surmountable, and that in many cases online experiments are a viable alternative to laboratory-based experiments.

Keywords: experimental design; data collection; online experiments; methods showcase

5. Saito, K., Hanzawa, K., Petrova, K., Kachlicka, M., Suzukida, Y., & Tierney, A. (2022). Incidental and Multimodal High Variability Phonetic Training: Potential, Limits, and Future Directions. *Language Learning*, 72(4), 1049–1091. <https://doi.org/10.1111/lang.12503>

Abstract: Scholars have extensively investigated the effectiveness of high variability phonetic training (HVPT), that is, identification and discrimination of second language speech sounds produced by multiple speakers followed by trial-by-trial feedback. Building on the notion of incidental and multimodal learning in cognitive psychology (e.g., Lim & Holt, 2011), we developed a new, HVPT-based videogame paradigm in which participants aimed to shoot clay targets as fast as possible while being guided to learn sound cues as a by-product of planned learning. Focusing on the speech acquisition of 58 Japanese English-as-a-foreign-language learners, the current study set out to test the pedagogical potential and limits of the incidental HVPT approach. According to the results of statistical analyses, the effectiveness of incidental HVPT can be more clearly observed if it focuses on more learnable targets (e.g., acquisition of English [æ]–[ʌ] rather than [r]–[l] contrasts) with gains being more generalizable from trained to new speakers' voices and from perception to production dimensions.

Keywords: second language speech; high variability phonetic training; incidental learning; multimodal learning; videogaming

6. Suarez-Rivera, C., Linn, E., & Tamis-LeMonda, C. S. (2022). From Play to Language: Infants' Actions on Objects Cascade to Word Learning. *Language Learning*, 72(4), 1092–1127. <https://doi.org/10.1111/lang.12512>

Abstract: Infants build knowledge by acting on the world. We conducted an ecologically grounded test of an embodied learning hypothesis: that infants' active engagement with objects in the home environment elicits caregiver naming and cascades to learning object names. Our home-based study extends laboratory-based theories to identify real-world processes that support infant word learning. Frame-by-frame coding of 2-hr video recordings of 32 mothers and their 18- to 23-month-old infants focused on infant manipulation and mother and infant naming of 245 unique objects. Objects manipulated by infants and/or named by mothers were more likely to appear in infants' vocabularies and spontaneous speech relative to nonmanipulated objects and objects that mothers did not name. Furthermore, the vocabularies of 5,520 infants hosted on Wordbank revealed an early age of acquisition of words for objects that mothers named and infants manipulated. Infants actively build object–word mappings from everyday engagements with objects in the context of social interactions.

Keywords: word learning; embodied learning; object play; parent responsiveness; naturalistic interaction

7. Hu, R., Wu, J., & Lu, X. (2022). Word-Combination-Based Measures of Phraseological Diversity, Sophistication, and Complexity and Their Relationship to Second Language Chinese Proficiency and Writing Quality. *Language Learning*, 72(4), 1128–1169. <https://doi.org/10.1111/lang.12511>

Abstract: This study investigated the relationship of a set of word-combination-based measures of phraseological diversity, sophistication, and complexity to second language (L2) Chinese proficiency and writing quality in comparison to that of a set of large-grained topic-comment-unit-based measures. Our dataset consisted of 101

assessed narratives produced by Korean learners of Chinese as a L2 at 3 proficiency levels. Multiple phraseological measures exhibited stronger correlations with quality ratings and/or larger effect sizes for proficiency than did the large-grained topic-comment-unit-based measures. Measures pertaining to language-specific features, including topic-comment-unit-based measures and phraseological measures based on language-specific word combination types, exhibited stronger discriminative power for intermediate and advanced levels than for beginning and intermediate levels. Our results also revealed the importance of predicate-related combinations in assessing L2 Chinese phraseological diversity and complexity. We discuss the implications of our findings for L2 Chinese writing research and L2 Chinese pedagogy.

Keywords: L2 Chinese writing; phraseological complexity; phraseological diversity; phraseological sophistication; syntactic complexity; word combinations

8. Keating, G. D. (2022). The Effect of Age of Onset of Bilingualism on Gender Agreement Processing in Spanish as a Heritage Language. *Language Learning*, 72(4), 1170–1208. <https://doi.org/10.1111/lang.12510>

Abstract: Montrul's (2008) onset age hypothesis predicts that, if attrition occurs in early bilingualism, it will be more severe in simultaneous than in sequential bilinguals. This study tested that prediction in an eye-tracking experiment focused on the processing of Spanish gender agreement during sentence reading. Heritage Spanish speakers exposed to English at different ages (0–3, 4–6, 7–10 years) read sentences containing violations of noun–adjective gender agreement in 2 distance conditions (adjacent, nonadjacent). Mixed-effects modeling with reverse Helmert contrasts showed that heritage speakers displayed sensitivity to gender agreement violations in their minority language regardless of onset age and noun–adjective proximity. However, onset age of majority language acquisition determined how early sensitivity manifested itself in the time course of grammatical processing. Consistent with Montrul's hypothesis, sequential bilinguals showed sensitivity to violations earlier in their eye-movement record than did simultaneous bilinguals. The results suggest onset age can affect grammatical processing in bilinguals who otherwise acquire target like mental representations.

Keywords: age of onset of bilingualism, heritage language processing; gender agreement; eye tracking; Spanish

PSYCHOLOGY AND DEVELOPING SOCIETIES

1. Hopkins, N. (2022). Identity Matters: A Social Psychology of Everyday Citizenship. *Psychology and Developing Societies*, 34(2), 159–174. <https://doi.org/10.1177/09713336221115531>

Abstract: This paper takes as its focus the need for psychologists to take issues of culture seriously. In doing so, it is important that psychologists adopt a critical approach to many widely held and taken-for-granted assumptions about culture and cultural processes. In particular, there is a pressing need to explore the ways in which constructions of culture routinely feature in the marginalisation of minority group members. Using examples drawn from the UK, I explore how cultural diversity can be represented by majority group members to question others' belonging within the national community. In turn, I consider the implications of this for minority group members' everyday (informal) experiences of citizenship (e.g. their ability to be heard in discussions about the nation and the challenges it faces). I also consider minority group members' experiences of such marginalisation and the various ways in which exclusionary constructions of culture and belonging may be contested.

Keywords: Culture, minorities, identity, citizenship, belonging, misrecognition

2. Steele, A. K., & Roseman, I. J. (2022). Appraisals Associated with Interpersonal Negative Emotions: What Distinguishes Anger, Contempt, Dislike, and Hatred? *Psychology and Developing Societies*, 34(2), 175–199. <https://doi.org/10.1177/09713336221115532>

Abstract: To aid in understanding the determinants of negative interpersonal and intergroup behaviours, this research tested theories specifying which appraisals of events would be associated with distinct negative emotions felt towards other individuals. To test hypotheses, we analysed survey responses from 128 MTurk workers and undergraduates in the USA who wrote about current and prior experiences of either anger, contempt, dislike, or hatred, and rated scales measuring hypothesised appraisals and emotional responses. As predicted, anger was associated with perceiving another person as blocking one's goals, whereas contempt was associated with perceiving another person as beneath one's standards; and anger, contempt, dislike, and hatred were each associated with perceiving events as motive-inconsistent and caused by another person. However, only one item measuring *prospective* control fit the predicted pattern of anger and contempt involving higher control potential than dislike and hatred. These results replicate and extend previous findings on appraisal-emotion relationships in India and the United States. Similarities and differences across cultures in appraisal-emotion relationships are discussed and applied to intergroup relations in developing societies.

Keywords: Cognitive appraisal, emotions, anger, hate, contempt, dislike

3. Kim, U., & Kim, J. (2022). Economic Development, Sociocultural Change and Quality of Life in Korea: Analysis of Three Generations Growing up in Colonial, Industrial and Digital Age. *Psychology and Developing Societies*, 34(2), 200–239. <https://doi.org/10.1177/09713336221115550>

Abstract: The article reviews key questions that are central to developing countries and provide a case study of South Korea (abbreviated as Korea): How could one of the poorest country in the world transform to become the 10th largest economy in the world? What are the psychological, relational, social and cultural impact of rapid economic development in Korea? How do these factors influence the subjective well-being, quality of life and happiness among three generations of Koreans? The first part of this article reviews the cultural history of Korea. The second part of this article reviews the rapid economic development that lifted Korea out of poverty into prosperity. The third part of this articles reviews the social and cultural changes that impacted the family, incentive structure and lifestyle of three generation of Koreans. The fourth part of this article reviews the impact of digital revolution on the psychological, economic and cultural life of Millennials and Gen Z (abbreviated as the MZ generation), and examine how they are different from their parent and grandparent generation. The fifth part of the articles reviews quality of life and social problems in Korea. In contrast to the economic prosperity that Koreans enjoy, the country is facing serious social problems with low marriage and fertility rate, high unemployment, divorce and suicide rate, and a bleak economic future for the MZ generation. The current situation in Korea is an example of *Innovator's Dilemma* (Christensen, 2016), where the economic and political model that accelerated economic growth is serving as an obstacle to innovation and change. The fifth part of this article reviews empirical studies conducted in Korea during the past 20 years focusing on subjective well-being, quality of life and happiness. The results indicate that social support received from close relationships and self, relational and social efficacy predict high subjective well-being, quality of life and happiness. In contrast, income and socio-economic status had very little impact on subjective well-being, quality of life and happiness. For the MZ generation, friends have become much more important than their parents in promoting happiness and online social support is emerging as an important factor. The information, knowledge and skills that they obtain from the online community are changing how they view the world, relate to others and live. The MZ generation represents the most educated, globally connected and socially conscious generation. They are starting a quiet revolution, demanding changes to social inequalities, discrimination and climate change that were create by and for the baby boomer generation.

Keywords: Economic development, sociocultural change, quality of life, happiness, general differences

4. Freire, M. R. (2022). Psychological Research in an Australian Remote Indigenous Context: Towards a Culturally Safe Cognitive Research Approach. *Psychology and Developing Societies*, 34(2), 240–261. <https://doi.org/10.1177/09713336221115553>

Abstract: Cognitive psychological research provides an evidence-based understanding of human cognition. For example, it can inform an understanding of how phonological awareness, visuospatial processing and working memory facilitate reading. However, the evidence base around reading acquisition is constructed from a Western, Educated, Industrialised, Rich and Democratic (WEIRD) perspective, with little consideration for whether such evidence extends to Australian Indigenous populations. Given the recognised need to improve literacy outcomes for Indigenous children, there is an applied benefit in conducting cognitive research to better understand how language, culture or context might influence the development of

neurocognitive processes underlying reading in remote Indigenous communities. However, it is essential that cultural cognitive research be conducted in a culturally fair and culturally safe manner. This requires critiquing and challenging standard cognitive research approaches and methodologies. Here I reflect on research that investigated neurocognitive factors associated with reading in an Indigenous context. I highlight the disjuncture between cognitive psychological research and Indigenous custom and practice and suggest that culturally safe cognitive research must embed Indigenous ways of knowing, being and doing. I assert that to work alongside Indigenous researchers as allies, non-Indigenous researchers must develop intercultural research skills. This includes building cultural competence and engaging in critical self-reflexivity.

Keywords: Indigenous, literacy, cultural competence, self-reflexivity, cultural safety, WEIRD

5. Mishra, R. C. (2022). Maternal Ideas About Child Competence in Two Cultural Groups of the Indian Society. *Psychology and Developing Societies*, 34(2), 262–286. <https://doi.org/10.1177/09713336221118121>

Abstract: This article examines the differences and similarities in the conception of child competence held by mothers of the Adivasi and non-Adivasi cultural groups of Indian society. Two hundred mothers, 100 from each group, who had a school-going child between 7 and 8 years of age (range = 6.5 – 8.5 years), served as respondents. The Adivasi mothers belonged to the *Kharwar* group, whereas the non-Adivasi mothers were all Hindus and belonged to *Yadav* and *Bania caste* groups. Respondents from both groups lived in the same villages. A mother’s conception of ‘competence’ was assessed by asking each mother to imagine a child of 7–8 years who she thought was ‘doing well’ and then point out the domains in which the child was ‘doing well’. It was found that mothers of both groups considered physical and social domains significant to the same degree. The non-Adivasi mothers, more than the Adivasi mothers, used cognitive competence to conceptualise competence, while the Adivasi mothers emphasised, emotional and self-related domains for defining competence. Certain important differences within the sub-domains of each of the five main domains between the two groups were also found. Differences in defining child competence between Adivasi and non-Adivasi mothers are understood in terms of parental ethno-theories and eco-cultural approach.

Keywords: Maternal beliefs, child competence, developmental niche, parental ethno-theories, ecocultural approach, socialization

6. Panda, M. (2022). Multilingual Intelligence: The Politics of Poverty, Desire and Educational Reform. *Psychology and Developing Societies*, 34(2), 287–314. <https://doi.org/10.1177/09713336221118123>

Abstract: This paper advocates a concept, “Multilingual Intelligence” (MI), for understanding human mind in economically challenging multilingual societies of developing nations. It examines the social, cognitive and intersubjective resources a multilingual society generates, and how these contribute to the development of human intellect. The attempt here is not to replace ontologically bounded imaginaries of old concepts and theories of intelligence with a new one, but to look at human

intelligence from another lens of human capacity to trans-/multilanguage. This paper discusses two paradigmatic cases - a “Multilingual Urban Poor (MUP)” and a “Multilingual Tribal Child (MTC)”- to conceptualise Multilingual Intelligence. The logic for MI is derived from the observation that because multilinguality and orality are commonplace in most societies in India, a speaker constantly trans/multilanguages and transknowledges. She reads the minds and linguistic behaviour of the interlocutors before speaking, switches between languages to enhance mutual intelligibility and, perennially lives in the realm of translation. These social-cognitive activities generate an enormous amount of cognitive flexibility, working memory, and higher inferential and metacognitive skills, making it more possible for the children to be intersubjectively attuned. Multilingual children develop a worldview that is founded primarily on connections and not on separation. Extending the two paradigmatic cases to children from other multilingual communities, this paper reflexively engages with how linguistic diversity and constraints impact human intelligence and creativity, and, if so, what should be our politics of human psychology, education and liberation.

Keywords: Multilingual intelligence, multilinguaging, transknowledging, cognitive flexibility, linguistic fluidity, politics of desire

PSYCHOLOGY IN THE SCHOOLS

1. Gazica, M. W., Leto, G. D., & Irish, A. L. (2022). The effects of unexpected changes to content delivery on student learning outcomes: A psychological contract perspective during the COVID-19 era. *Psychology in the Schools, 59*(8), 1473–1491. <https://doi.org/10.1002/pits.22685>

Abstract: Meta-analyses suggest that student learning outcomes (SLOs) are comparable across modalities of instruction. None of these studies examined how unmet student expectations (here, unexpected changes in course delivery) might increase perceptions of student–instructor–university psychological contract breaches (PCBs) and, ultimately, perceived SLOs within and across modalities. The COVID-19 pandemic provided an opportunity to study these potential relationships because many residential institutions of higher education opted into, or were required to, offer distance and/or blended learning to accommodate COVID-19 safety mandates. This study sampled undergraduate students ($n = 155$) from a university, which, before the pandemic, offered exclusively face-to-face classroom instruction. During the Fall 2020 semester, however, this university offered three modalities of instruction: (1) face-to-face; (2) blended learning; and (3) distance education. The results of this study suggest that perceived PCBs by instructors and universities negatively influence underlying indices of student achievement in terms of motivation, engagement, and learning within and across modalities of instruction. Given this and near universal decrements in student enrollment and retention in institutions of higher education, it is important for universities and instructors to understand, explicitly and transparently negotiate, and meet student expectations to improve student progression to graduation and maintain competitiveness among similar institutions.

Keywords: modalities of instruction. Psychological contracts, student learning outcomes, university students

2. Martin, C. L., Xiao, S. X., DeLay, D., Hanish, L. D., Fabes, R. A., Morris, S., & Oswald, K. (2022). Gender integration and elementary-age students' classroom belongingness: The importance of other-gender peers. *Psychology in the Schools, 59*(8), 1492–1510. <https://doi.org/10.1002/pits.22687>

Abstract: Most US students attend coeducational classes, but to what extent do students feel integrated into the entire classroom of their peers, especially with other-gender (OG) peers? The major goal of this study was to investigate how variations in gender integration (GI), measured by students' expectancies about inclusion, efficacy, and social costs of interacting with OG peers, predicted school liking and classroom supportiveness over an academic year, using a short-term longitudinal design. We also explored how students' expectancies changed over the year. Participants included elementary school students (515 school-age children; 51% boys, $M_{age} = 9.08$ years, $SD = 1.00$; 3–5th grade; 26 classrooms). A two-wave latent change score model showed that changes over the year varied depending on the type of expectancy, grade, and gender, with decreases in inclusion and efficacy for boys. Longitudinal path analyses conducted to assess whether GI expectancies predicted school belongingness showed that students' levels of OG inclusion in the Fall uniquely predicted changes in levels of school liking and classroom community over the year, even with many controls in the model. The findings demonstrate that students' relationships with OG

peers matter for having a sense of belonging in school, and educators should support and encourage these relationships.

Keywords: gender integration, gender relationships, inclusion, school belongingness

3. Kim, A. (2022). The effect of music on accuracy in the Stroop test. *Psychology in the Schools*, 59(8), 1511–1520. <https://doi.org/10.1002/pits.22689>

Abstract: First introduced by Frances Raucher, The Mozart Effect is the idea that there is a transient impact of music listening on spatial-temporal processing. Researchers have found considerable merit to investigate the phenomena. The field has moved beyond the original claims of the Mozart Effect, with the arousal–mood hypothesis as one dominant interpretation. The hypothesis postulates that a modest increase in performance while listening to pleasant, energetic music is understood as a transient consequence of changes in mood and arousal. Therefore, the “Mozart Effect” can influence learning outcomes. The aim of this study is to examine the effect of music through the arousal-and-mood hypothesis by using the Stroop task. Subjects were randomly assigned to three conditions Mozart (positive), rock (negative), or no music (control). While working on the stroop task. Participants in all three conditions were assessed with an accuracy score. The results showed that both positively and negatively arousing music enhanced test scores. My study showed that both classical music and rock music had an effect in my experiment. Further studies should be explored if the enhanced cognitive ability can be used for therapeutic purposes.

Keywords: Executive Function

4. Grazia, V. (2022). A longitudinal study of school climate: Reciprocal effects with student engagement and burnout. *Psychology in the Schools*, 59(8), 1521–1537. <https://doi.org/10.1002/pits.22691>

Abstract: The literature on school climate, albeit vast, is limited by a scarcity of longitudinal research. This two-wave longitudinal study aims to bridge this gap by (a) assessing, over two school years, the changes in students’ perceptions of several dimensions of school climate and (b) exploring the reciprocal longitudinal effects of student perceptions of school climate and multiple dimensions of engagement and burnout. The study was conducted with a sample of 243 Italian middle school students (Wave 1: sixth grade, $M_{age} = 11.68$; Wave 2: seventh grade, $M_{age} = 12.64$; 51.7% girls). Analyses of variance showed, in the second school year, a decrease in students’ satisfaction with various school climate dimensions. With a latent cross-lagged model, better school climate perceptions were found to predict higher emotional engagement and lower symptoms of burned-out exhaustion a year later. The practical implications of these findings are considered in the discussion and conclusion.

Keywords: cross-lagged model, longitudinal, middle school, school burnout, school climate, student engagement

5. Kupchik, A., Highberger, J., & Bear, G. (2022). Identifying the helpfulness of school climate: Skipping school, cheating on tests, and elements of school climate. *Psychology in the Schools*, 59(8), 1538–1555. <https://doi.org/10.1002/pits.22692>

Abstract: Prior research demonstrates the importance of school climate in shaping student behavior but tells us less about which aspects of school climate matter. In this paper we consider how distinct elements of school climate relate to skipping school and cheating on tests. Using survey and administrative data from several statewide Delaware sources, we perform a series of random-intercept logistic regression models. We find that students in schools perceived to have a climate with high levels of structure and support are less likely to report cheating on tests. Yet we do not find a robust relationship between most climate measures and skipping school. School climate relates strongly to in-school deviant behavior but much less to school-related deviant behavior occurring outside of schools. By specifying what measures of climate do and do not relate to problematic student behaviors, our results sharpen our understandings of how school climate shapes student behaviors.

Keywords: cheating, education, school climate, skipping school

6. Zyberaj, J. (2022). Investigating the relationship between emotion regulation strategies and self-efficacy beliefs among adolescents: Implications for academic achievement. *Psychology in the Schools*, 59(8), 1556–1569. <https://doi.org/10.1002/pits.22701>

Abstract: The present study sought to investigate the implications of emotion regulation strategies for academic achievement in adolescence. First, the relationship between various facets of emotion regulation strategies and self-efficacy beliefs was investigated. Second, emotion regulation strategies were scrutinized in relation to academic achievement. Using a sample of middle school adolescents ($N=478$; 181 female), from a collectivist society, the results of correlation analysis revealed positive and negative relationships between different facets of emotion regulation strategies and self-efficacy beliefs. For instance, reappraisal (a positive emotion regulation strategy) was positively correlated with academic self-efficacy, a critical facet for learning and academic achievement ($r = .32, p < .01$). Similarly, there were positive and negative correlations between emotion regulation strategies and academic achievement. Implications for both adolescents and schools are discussed.

Keywords: academic achievement, adolescents, emotion regulation strategies, self-efficacy beliefs

7. Martinez, A., O'Connor, K., McMahon, S., Bhatia, S., & Primavera, J. (2022). Challenges to implementing parent-focused antibullying policies: Lessons learned in Connecticut. *Psychology in the Schools*, 59(8), 1570–1586. <https://doi.org/10.1002/pits.22720>

Abstract: Bullying is a public health concern warranting policy-level responses. Toward this end, states are enacting antibullying policies that require schools to be inclusive of parents. The current study examines parent-related challenges as schools implement newly amended antibullying legislation in Connecticut. School personnel data were analyzed from 24 semistructured interviews and qualitative survey responses across 300 schools. We used inductive coding techniques to synthesize data into broader themes. Four major challenges to implementing antibullying policies emerged from qualitative analysis: (1) challenges to parent engagement, (2) interpretation of the word “bullying,” (3) parent affective responses, and (4) conflicting home and school norms. State antibullying laws call for greater parent

engagement, but schools are often not fully inclusive of parents. A greater focus on the developing a positive school climate and a culture of parental engagement can facilitate the implementation of antibullying laws and ensure the safety of children.

Keywords: bullying, legislation, parent, policy, school

8. Kranski, T. A., & Steed, E. A. (2022). Practice-based coaching to improve culturally responsive practices in early childhood classrooms: A single-case experimental design. *Psychology in the Schools*, 59(8), 1587–1608. <https://doi.org/10.1002/pits.22703>

Abstract: An experimental analysis of a workshop plus practice-based coaching (PBC) was conducted to enhance four early childhood educators' use of culturally responsive practices. A multiple baselinedesign across participants was used to examine the effects of a workshop and PBC on four early childhood teachers' use of culturally responsive practices, such as learning about children's home cultures and ensuring books reflect cultural diversity. A functional relation was established between the intervention and targeted culturally responsive practices for three of the four teachers. Descriptive findings suggested that particular culturally responsive practices were implemented at higher rates than others. School personnel viewed the goals, process, and outcomes of the workshop and PBC positively. Implications for practice and research are discussed, including the complex nature of providing coaching on the topic of culturally responsive practices in early childhood classrooms.

Keywords: coaching, culturally responsive, early childhood

9. Li, Y., Liu, C., Yang, Y., Du, Y., Xie, C., Xiang, S., Duan, H., & Hu, W. (2022). The influence of resilience on social creativity: Chain mediation effects of sense of humor and positive mood. *Psychology in the Schools*, 59(8), 1609–1622. <https://doi.org/10.1002/pits.22718>

Abstract: Though previous research has established a strong link between resilience and cognitive creativity, few studies have extended this association to creativity. The underlying mechanisms of the influence of resilience on social creativity remain unknown. Therefore, the current study introduced sense of humor and positive mood to explore the influence of resilience on social creativity. We established a chain mediation model with data from 186 Chinese college students. The results showed that resilience was associated with social creativity. The sense of humor and positive mood were serial mediators in this relationship. The results have demonstrated that student participants with higher levels of resilience are more likely to use humor in their study, which may help them get a more positive mood than their counterparts with lower levels of resilience. Then, positive mood is conducive to students' performance of social creativity.

Keywords: resilience, social creativity, sense of humor, positive mood, chain mediation effects

10. Walker, V. L., Loman, S. L., Mickelson, A. M., & Lyon, K. J. (2022). Participation of students with extensive support needs in SWPBIS: Administrator and educator perspectives. *Psychology in the Schools*, 59(8), 1623–1642. <https://doi.org/10.1002/pits.22711>

Abstract: We explored the involvement of students with extensive support needs (ESN) in School-wide Positive Behavioral Interventions and Supports (SWPBIS). We interviewed 15 administrators and special and general educators from elementary schools implementing SWPBIS during the 2019–2020 school year and analyzed responses using qualitative content analysis. In spite of reported challenges related to student characteristics and low expectations among school personnel, participants indicated that students with ESN were taught school-wide expectations and received public acknowledgement at Tier 1, often with adaptations and evidence-based practices, and were considered for Tier 2. Although participants reported commitment to inclusion as a central aspect of SWPBIS, inclusion primarily occurred outside academic classrooms, which limited student involvement across SWPBIS activities. Finally, few participants indicated that students with ESN were involved in SWPBIS data collection activities. Implications include that schools should systematically include students with ESN in all tiers of SWPBIS in such a way that focuses on students' meaningful benefit rather than solely on their physical inclusion and create systems that ensure special and general educators collaborate in SWPBIS implementation. Our findings provide a framework for future studies to identify conditions and effective strategies that ensure SWPBIS benefits all students.

Keywords: extensive support needs, interview, qualitative content analysis, school-wide positive behavioral interventions and supports, severe disabilities, SWPBIS

11. Mischenko, P. P., Nicholas-Hoff, P., Schussler, D. L., Iwu, J., & Jennings, P. A. (2022). Implementation barriers and facilitators of a mindfulness-based social emotional learning program and the role of relational trust: A qualitative study. *Psychology in the Schools*, 59(8), 1643–1671. <https://doi.org/10.1002/pits.22724>

Abstract: Based on an overarching analysis of the ecological levels or contexts that implementers experienced as barriers and facilitators in the delivery of a mindfulness-based social-emotional learning program, this study reveals the importance of relational trust between the implementer and actors within the various ecological levels. This study applies Bryk and Schneider's framework of relational trust to bring nuance and understanding to relationships that influence the implementer's ability to effectively deliver the program. This study explores the implementers' relationships with: the curriculum professional learning team, the district/school administration, schoolteachers/colleagues, students' families, students, and themselves. A qualitative case study approach was employed and included interviews and classroom observations of 10 teachers delivering the program in the elementary school context. Inferences about the strength of relational trust are made between implementers with high and low fidelity based on qualitative and numerical analysis of coded interview segments. Recommendations are made for a whole school community approach that emphasizes the development of relational trust before program implementation.

Keywords: barriers, Compassionate Schools Project, facilitators, implementation, mindfulness, qualitative, relational trust, social-emotional learning curriculum

12. Akgül, G., & Atalan Ergin, D. (2022). School counselors' attitude toward online counseling services during the pandemic: The effects of resilience and digital self-efficacy. *Psychology in the Schools*, 59(8), 1672–1685. <https://doi.org/10.1002/pits.22716>

Abstract: School counseling activities have been delivered online during the COVID-19 pandemic. This compulsory change has been associated with difficulties in school counseling services. The resilience and digital skills of school counselors are likely to influence the quality of counseling services and their attitude toward online work. Thus, we examined the role of resilience on their attitude toward online counseling services during the pandemic. We also looked at the role of digital skills on their attitudes toward online counseling. The sample consisted of 149 school counselors. We conducted structural equation modeling, in which the direct and indirect effects of resilience and digital self-efficacy was tested. The results suggested that higher resilience was significantly associated with better attitudes toward school counseling. Moreover, resilient school counselors had higher digital self-efficacy, which was associated with more positive attitudes toward online school counseling. The implications in terms of preservice and in-service education of school counselors and interventions to promote resilience were discussed.

Keywords: attitude toward online counseling, digital self-efficacy, pandemic, resilience, school counselors

13. Oger, M., Martin-Krumm, C., Fenouillet, F., Müller, A., Le Roux, F., Tarquinio, C., & Broc, G. (2022). Quality of life at school: Between vulnerability and robustness of students. *Psychology in the Schools*, 59(8), 1686–1700. <https://doi.org/10.1002/pits.22719>

Abstract: The quality of life of students at school is an increasingly topical issue in relation both to public health issues, made more acute by the pandemic and successive confinements, and to the technical nature of future jobs which means training has become an economic issue. There are therefore two issues, one linked to health and the other to school performance. A cross-sectional design was adopted. Questionnaires were administered to 470 volunteer student's seventh grade US to the first year of the Senior Technician Curriculum aged from 12 to 23 years (139 girls and 331 boys, $m = 15.7$ years). Latent profiles analysis and the Games–Howell post hoc test were used. Analyses carried out with MPlus reveal three possible profiles. They also show that these profiles have a strong predictive power on motivation and perceived health.

Keywords: job demands-resources model, latent profile analysis, quality of life in the schools

14. Marsico, K. F., Wang, C., & Liu, J. L. (2022). Effectiveness of Youth Mental Health First Aid training for parents at school. *Psychology in the Schools*, 59(8), 1701–1716. <https://doi.org/10.1002/pits.22717>

Abstract: Youth Mental Health First Aid (YMHFA) teaches adults to recognize signs and symptoms of youth mental illness and intervene using a five-step action plan. While studies have examined the effects of the YMHFA on school staff, limited

attention has been given to parent trainees in the school setting. The present study examined the outcomes following YMHFA for parents at school using a prepost and 2-month follow-up design. Researchers collaborated with schools to offer six free trainings at no cost to parents. A total of 107 parents participated in the research by completing the pre- and postsurveys. In addition, 64 of them also completed the 2-month follow-up survey after completing the YMHFA training. Analysis of covariances results indicated that following the YMHFA training, parents' mental health literacy, help-seeking intentions, attitudes toward help-seeking, behavioral intentions to use the Mental Health First Aid (MHFA) action plan, and confidence in MHFA skills increased significantly. Stigma decreased significantly. All significant changes were maintained at the 2-month follow-up. Participants also provided feedback and suggestions. Thematic analysis was used to identify themes related to beneficial aspects of YMHFA and ways to improve the training for parents at school. Implications for engaging parents in school to support youth mental health are discussed.

Keywords: mental health, prevention and early intervention, parent engagement

RESONANCE

1. Deshpande, S. (2022). A Simple Idea to Understand Complexity. *Resonance*, 27(12), 2033–2044. <https://doi.org/10.1007/s12045-022-1504-1>

Abstract: What is common between the French flag and a developing embryo? Both exhibit specific patterns. In vast majority of multicellular organisms, a single-celled zygote forms a multicellular organism through embryonic development. During this development, the cells arising from a single-celled zygote differentiate to form different types of cells, different organs, tissues, and structures, eventually forming a complex multicellular organism. How do the cells ‘know’ what structures to form, where to form them and when to form them? Wolpert’s French flag model explains one of the ways by which the cells know some of these ‘answers’ by obtaining their position along a chemical gradient in the embryo. The French flag model is applicable to many developmental processes in many organisms and also in the process of regeneration, making the model one of the significant contributions in biology.

Keywords: Developmental biology, the French flag model, pattern formation, Sea urchin embryo, hydra regeneration

2. Rajaraman, V. (2022). A Concise History of the Internet—II. *Resonance*, 27(12), 2045–2068. <https://doi.org/10.1007/s12045-022-1505-0>

Abstract: In this part, I describe how CSNET started in 1981 with funding from the National Science Foundation (NSF) of the US government and the formation of the Merit network and BIT-NET. Following this, I discuss the formation of the NSFnet in 1986 connecting the supercomputer centres set up by the NSF in the US and its expansion by connecting it to the ARPANET, CSNET, Merit, and regional networks. I then trace the steady improvement of the speed of the NSF net and its gradual privatization and the emergence of the worldwide Internet. I then describe the evolution of the Domain Name System and the consequences of the rapid expansion of the Internet. The article concludes with issues of governance of the Internet which has now become an essential infrastructure of our World.

Keywords: CSNET, merit network, BITNET, NSFnet, domain name system, ICANN, EUNET, internet governance.

3. Kaur, J. (2022). From Sequence Analysis to Application. *Resonance*, 27(12), 2069–2098. <https://doi.org/10.1007/s12045-022-1506-z>

Abstract: The field of biological sciences enumerates various important aspects of life forms, some of which remain mysterious to explain or validate. Though there has been a revolutionary advancement of tools and techniques to study different biological phenomena under laboratory conditions, there are significant limitations with implementing each concept in the laboratory. Sometimes, it is practically impossible to simulate the actual environmental conditions of living systems under in-vitro settings, or sometimes the requirements of life are discordant with various analytical techniques, or the study of complex evolutionary processes becomes technically difficult using wet-lab methods. Thus, these experimental challenges confine our boundary to explore the real world of biological systems, which

may lead to the acquisition of knowledge with few lacunae. Bioinformatics as a discipline tries to fill those spaces to a major extent using in silico analysis and provides a deeper theoretical foundation and validation of existing biological principles. The importance and potential of bioinformatics have been witnessed in the pandemic times to fight against Covid-19. From developing new drugs and vaccines to crop improvement and space and environment studies, the field of bioinformatics has many prospects. This article aims to provide a bird's-eye view of different applications and cutting-edge bioinformatics approaches to understand biological systems and the emerging need to integrate this course into the education framework.

Keywords: In-silico, 'omic' studies, next-generation sequencing, bioinformatic literacy.

4. Ahsan, H. (2022). A Brief History and Discovery of Autoimmunity. *Resonance*, 27(12), 2099–2105. <https://doi.org/10.1007/s12045-022-1507-y>

Abstract: The concept of the immune system being able to recognize 'foreign' chemicals dates back to the early twentieth century. However, it was not generally understood until the early 1950s that an immune response could be generated not just against foreign antigens but also 'self' antigens. Macfarlane Burnet is known as the "Father of autoimmunity" since he founded the discipline and developed the clonal selection theory of forbidden clones. Peter Brian Medawar is known as the "Father of transplantation" for developing the concept of immunological tolerance. This article gives a brief account of the origin and history of autoimmunity and autoimmune diseases.

Keywords: Autoimmunity, immunology, autoimmune diseases, antigens, antibodies, self-tolerance, history of autoimmunity.

5. Tatitscheff, V. (2022). Monstrous Moonshine. *Resonance*, 27(12), 2107–2126. <https://doi.org/10.1007/s12045-022-1508-x>

Abstract: This text is a short and elementary introduction to the 'monstrous moonshine' aiming to be as accessible as possible. We first review the classification of finite simple groups out of which the monster naturally arises and the latter's features that are needed to state the moonshine conjecture of Conway and Norton. Then, we motivate modular functions and forms from the classification of complex tori, with the definitions of the J-invariant and its q-expansion as a goal. We eventually provide evidence for the monstrous moonshine correspondence, state the conjecture, and then introduce the ideas that led to its proof. Lastly, we give a brief account of some recent developments and current research directions in the field.

Keywords: Finite groups, classification of finite simple groups, sporadic groups, moduli space of complex tori, modular functions, modular forms, monstrous moonshine conjectures, vertex operator algebra, Borcherds' proof.

6. Bittanti, S. (2022). The Mathematician Who Revolutionized Engineering. *Resonance*, 27(12), 2127–2138. <https://doi.org/10.1007/s12045-022-1509-9>

Abstract: This article is based on a lecture given by the author at the IEEE 3rd Conference on Norbert Wiener in the 21st Century, held virtually at Anna University, Chennai (India), in July 2021. The article describes the personality of Wiener—both his mathematical skills (by focusing on the prediction problem) and his vision of science (through cybernetics).

Keywords: Prediction theory, cybernetics, control science.

7. Hegde, A., Kumar, A., Agarwala, A., & Muralidharan, B. (2022). Exploring Ideas in Topological Quantum Phenomena. *Resonance*, 27(12), 2139–2151. <https://doi.org/10.1007/s12045-022-1510-3>

Abstract: Geared as an invitation for undergraduates, beginning graduate students, we present a pedagogical introduction to one-dimensional topological phases—in particular, the Su–Schrieffer–Heeger model. In the process, we delve upon ideas of entanglement using the correlator method and the von-Neumann density matrix method, geometric phase, polarization, transport signature and the role of electron–electron interactions. Through hands on numerical experiments, whose codes are shared, we try to drive home the message why a program of simulating quantum electronics with topological toy models is the storehouse for discovering fantastic physics ideas.

Keywords: Quantum mechanics, SSH, polarization, geometric phase, entanglement, correlator method, von-Neumann density-matrix method, transport signatures.

8. Sarpotdar, P. S. (2022). Motion of Interstellar Dust Grains Under Radiation Pressure. *Resonance*, 27(12), 2153–2159. <https://doi.org/10.1007/s12045-022-1511-2>

Abstract: Though interstellar dust mass is negligible compared to the stars and the interstellar gas, it is in continuous contact with the rest of the world instead of being an isolated entity. Interstellar dust mass significantly influences the star formation process and its appearance. Hence it is important to study how it interacts with its environment. Here, we try to understand the motion of interstellar dust grains in the presence of the forces, viz., the drag force due to the interstellar gas and the radiation pressure due to a nearby star.

Keywords: Interstellar dust grains, cross section, radiation pressure, drag, critical IDG radius, angular momentum, drag-lifetime.

9. Ramapanicker, R., & Singh, V. K. (2022). Nobel Prize in Chemistry 2021. *Resonance*, 27(12), 2161–2181. <https://doi.org/10.1007/s12045-022-1512-1>

Abstract: The Nobel Prize in Chemistry for the year 2021 was awarded to Prof. Benjamin List of Max-Planck-Institut für Kohlenforschung, Mülheim an der Ruhr, Germany and Prof. David W.C. MacMillan of Princeton University, Princeton, NJ, USA. The award was given for their contribution to developing and popularizing asymmetric organocatalysis as an efficient tool for the construction of organic molecules. Organocatalysis is the use of small organic molecules to catalyze organic reactions, which has gained attention for bringing about asymmetric transformations without the use of metal catalysts. Both Prof. List and Prof. MacMillan pioneered the

activation of carbonyl compounds by converting them to iminium ions or enamines using optically active secondary amines as organocatalysts. This article will discuss the contributions of List and MacMillan with brief introductions to the problems they attempted to solve using organocatalysis.

Keywords: Asymmetric synthesis, organocatalysis, enamines, iminium ions, aldol reaction, Diels–Alder reaction, proline, imidazolidinone.

10. Bagawan, K., Roshni, M., & Jagadeesan, D. (2022). An Overview of Volatile Organic Compounds (VOCs). *Resonance*, 27(12), 2183–2211. <https://doi.org/10.1007/s12045-022-1513-0>

Abstract: VOCs are volatile organic compounds that are produced naturally as well as due to anthropogenic activities. The application of VOCs ranges from being a biological chemical signal to a metabolic product to a serious pollutant. VOCs are gaining significance in the context of biology, diagnostics, sustainability as well as a healthy lifestyle. In this article, an overview of VOCs, their sources and their applications are discussed.

11. Ramkarthik, M. S., & Pereira, E. L. (2022). Airy Functions Demystified — III. *Resonance*, 27(12), 2213–2241. <https://doi.org/10.1007/s12045-022-1514-z>

Abstract: Airy and Bessel functions are one of the most popular and important special functions in various branches of physics, mathematics, and engineering. An observation to their behavior for the real argument suggest that they are related. This relation was studied earlier, but were accompanied by a number of assumptions, approximations, and sometimes even misconceptions. This motivated us to develop a fresh and transparent method to establish these relations. As the continuation of our study of the two papers published in resonance already, here we have used the general asymptotic series and the convergent series of these functions and thereby developed two new methods which throw light on the subtle interrelationships between these functions. Numerical evidences of our claims are provided for better clarity and understanding.

Keywords: Airy function, Bairy function, Bessel functions, modified Bessel functions, Macdonald function, asymptotic expansions, convergent series.

SCANDINAVIAN JOURNAL OF EDUCATIONAL RESEARCH

1. Uibu, M., Kalma, M., Mägi, K., & Kull, M. (2021). Physical Activity in the Classroom: Schoolchildren's Perceptions of Existing Practices and New Opportunities. *Scandinavian Journal of Educational Research*, 66(7), 1109–1126. <https://doi.org/10.1080/00313831.2021.1958376>

Abstract: Engaging key stakeholders, including students into the process of school-based physical activity (PA) intervention planning is considered important. The present study was part of the preparatory phase of the Estonian Schools in Motion pilot programme and aimed to examine students' perspective of PA opportunities in the classroom. Based on 17 focus group interviews with 92 Estonian children aged 8–15, the results demonstrate that although PA is not yet a natural part of academic lessons in Estonia, students are eager and motivated to practise more PA. Even though they do not associate PA and academic lessons in general, they can come up with a wide range of activities that could make learning process more physically active. Students could identify several activities from incidental and content-related movement to games and energy breaks which helps to broaden the scope of classroom PA.

Keywords: Physical activity; movement integration; academic lessons; students; focus groups; teaching methods

2. Tatiana, S., Hanna, J., Kristiina, M., Jouni, P., & Sanna, J. (2021). The Changes in Lower Secondary School Students' Interest During Collaborative Learning. *Scandinavian Journal of Educational Research*, 66(7), 1127–1140. <https://doi.org/10.1080/00313831.2021.1958377>

Abstract: This study explored the situational interest and emotional valence of 13-year-old students ($N=94$) participating in a five-session science course. The relationship between students' situational interest and emotional valence and their individual interest was also studied. During each session, students participated in a collaborative learning task. Before and after each task, students' situational interest and emotional valence were measured through a single-item self-report questionnaire. Individual interest was measured by the Task Interest Inventory scale at the beginning of the course. Students showed increasing levels of emotional valence after each collaborative learning task; however, they only reported significantly higher situational interest after the first task. Furthermore, the relationship between students' emotional valence and their individual interest frequently decreased after collaborative learning tasks. The findings suggest that collaborative learning could be a potential factor in changing situational interest. Areas for further research are provided.

Keywords: Situational interest; emotional valence; individual interest; collaborative learning; motivation

3. Svartdal, F., Sæle, R. G., Dahl, T. I., Nemtcen, E., & Gamst-Klaussen, T. (2021). Study Habits and Procrastination: The Role of Academic Self-Efficacy. *Scandinavian Journal of Educational Research*, 66(7), 1141–1160. <https://doi.org/10.1080/00313831.2021.1959393>

Abstract: Inefficient study skills increase the probability that study work is perceived as difficult and aversive, with procrastination as a likely result. As a remedy, more effective study skills and habits may be encouraged. However, research indicates that good study skills and habits may not by themselves be sufficient to remedy problems, as this relationship may be mediated by efficacy beliefs related to academic functioning. We investigated this hypothesis across three student samples (total $N = 752$). As predicted, structural equation modeling (SEM) indicated that study self-efficacy mediated the study habits—procrastination relation. The mediation effects were medium to large. We conclude that training of, and advice on, study skills and habits should be accompanied by measures that build study self-efficacy.

Keywords: Study habits; study skills; academic procrastination; study self-efficacy; self-efficacy

4. Jederlund, U., & von Rosen, T. (2021). Changes in Students' School Trust as a Reflection of Teachers' Collective Learning Processes: Findings from a Longitudinal Study. *Scandinavian Journal of Educational Research*, 66(7), 1161–1182. <https://doi.org/10.1080/00313831.2021.1982764>

Abstract: This 2-year longitudinal study compares students' trajectories for perceived teacher–student relationship quality and students' self-efficacy (together discussed as students' school trust) to previously documented teacher-perceived experiences in teacher teams' collective learning processes. The article's main contribution is the reflection in students' perceptions, of their teachers' perceived quality and attainment in collective learning processes. Comparisons between schools show that trajectories for students belonging to the only teacher team that experienced a more mature and successful learning process in an earlier study, differed significantly from the trajectories for students in compared teams. Differences demonstrated large positive effect sizes ($d = 0.81–1.14$). Individual analysis provides deeper insights about *how* these students' perceptions changed. Additionally, the full sample data confirms earlier findings of substantial cross-associations between student-perceived teacher–student relationship quality and student self-efficacy. For example, sustainable associations between supportive teacher–student relationships and students' global academic self-efficacy and self-efficacy for self-regulative learning were found ($r = 0.43–0.51$).

Keywords: Teachers' collective learning; teacher-student relationship; student self-efficacy; student's perspectives; trust

5. Lund, T. (2021). Research Problems and Hypotheses in Empirical Research. *Scandinavian Journal of Educational Research*, 66(7), 1183–1193. <https://doi.org/10.1080/00313831.2021.1982765>

Abstract: Criteria are briefly proposed for final conclusions, research problems, and research hypotheses in quantitative research. Moreover, based on a proposed definition of applied and basic/general research, it is argued that (1) in applied quantitative research, while research problems are necessary, research hypotheses are unjustified, and that (2) in basic/general quantitative hypothesis-testing research, research hypotheses are sufficient, while research problems are unjustified. These

arguments are partly related to the distinction between taking knowledge for granted and regarding knowledge as being on trial. The paper illustrates the central role played by the study's general aim and its relation to existing knowledge in the research domain.

6. Harðarson, A., & Magos, K. (2021). Emotional Demands and Moral Rewards: A Story Told by Fifteen Teachers. *Scandinavian Journal of Educational Research*, 66(7), 1194–1203. <https://doi.org/10.1080/00313831.2021.1982766>

Abstract: In several publications, Doris Santoro has argued that modern schools emphasize success to such a degree that they exclude the possibility of the moral rewards embedded in good teaching. Lack of such rewards, she says, leads to demoralization that is commonly misdiagnosed as burnout. Commenting on her work, Jeff Frank has argued that teachers may need to live with the fact that their work cannot in the foreseeable future be the way it should be. This paper is based on interviews with 15 teachers in Iceland and Greece. They all described boosts and payoffs in terms that fit into Santoro's account of moral rewards. The stories they told us indicate that although the dark clouds of demoralization hang over their workdays, they also enjoy the sunlight of pedagogical freedom and professional autonomy. The reality they experience is a mixture of shadows and light.

Keywords: Teachers; professionalism; autonomy; emotional demands; moral rewards; burnout; demoralization

7. Ollfors, M., & Andersson, S. I. (2021). Influence of Personality Traits, Goals, Academic Efficacy, and Stressload on Final Grades in Swedish High School Students. *Scandinavian Journal of Educational Research*, 66(7), 1204–1220. <https://doi.org/10.1080/00313831.2021.1983644>

Abstract: The influence of personality factors, school achievement goals, academic efficacy, and stressload of serious problems on final grades was studied by giving a questionnaire, The Perceived Stress and Control Assessment Scale, to 915 Swedish high school students. A new measure, Stressload Index, was created by extending the Control-Stress Index. Structural Equation Modeling analysis revealed that the variance in final grades was explained by four predictors, namely academic efficacy, stressload of serious problems, neuroticism, and extraversion, to 13%, academic efficacy contributing most. The effect of stressload of serious problems was shown to be negative. The influence of extraversion was negative, whereas neuroticism had a positive effect on final grades.

Keywords: Adolescent stress; personality; extraversion; neuroticism; academic efficacy; school achievement goals; final grades

8. Kytälä, M., & Björn, P. M. (2021). Mathematics Performance Profiles and Relation to Math Avoidance in Adolescence: The Role of Literacy Skills, General Cognitive Ability and Math Anxiety. *Scandinavian Journal of Educational Research*, 66(7), 1221–1236. <https://doi.org/10.1080/00313831.2021.1983645>

Abstract: The main aim of the study was to differentiate adolescent profiles by math performance at the beginning and end of the final two years of lower secondary

school, and relevant baseline attributes (literacy skills, general cognitive ability, math anxiety), and to investigate how these profiles differed by gender and math avoidance. A total of 193 Finnish lower secondary students participated in this study. Four profiles were identified: (1) High academic, average anxiety; (2) low academic, average anxiety; (3) average academic, high anxiety; and (4) average academic, average anxiety. They differed in baseline attributes, math performance over two school years, math avoidance, and in gender ratio. High levels of math anxiety was related to unfavourable math trajectory and future math avoidance. This high anxiety was typical of a certain group of average performers but not of the lowest performers. The educational implications of the findings are discussed.

Keywords: Math performance; adolescence; math anxiety; math avoidance

9. Malling, A. S. B., Juul, H., Gejl, A. K., Damsgaard, L., Wienecke, J., & Nielsen, A. M. V. (2021). Word Reading, Letter Knowledge, and Memory Skills in Danish Children (6-Year-Olds). *Scandinavian Journal of Educational Research*, 66(7), 1237–1252. <https://doi.org/10.1080/00313831.2021.1983646>

Abstract: In Denmark there is an ongoing trend towards a more ambitious literacy instruction in the first school year (Kindergarten). This calls for a clarification of present-day reading levels, and for a profile of the students who become readers while attending the semi-formal literacy program. The present study examined the extent to which a group of 209 Danish students had acquired word reading skills after 7 months of schooling, and whether reading levels in this group could be predicted from new measures of extended letter-sound knowledge and measures of memory skills. Results showed that 28% had acquired basic word reading skills. Further, measures of extended letter-sound knowledge explained significant variance above the measure of the fluency with which letters were named. Moreover, short term memory capacity was a stronger predictor of word reading compared to working memory and explained modest variance in reading after controlling for letter knowledge.

Keywords: Decoding; letter knowledge; working memory; short-term memory; kindergarten

10. Bjørndal, K. E. W., Antonsen, Y., & Jakhelln, R. (2021). Stress-coping Strategies amongst Newly Qualified Primary and Lower Secondary School Teachers with a Master's Degree in Norway. *Scandinavian Journal of Educational Research*, 66(7), 1253–1268. <https://doi.org/10.1080/00313831.2021.1983647>

Abstract: Research studies have documented the causes of perceived stress in teachers, while less attention has been given to identifying appropriate stress-management strategies. The aim of this article is to provide insight into the strategies for coping with stress that newly qualified primary and lower secondary school teachers with a five-year integrated master's degree from a Norwegian teacher education institution employ in their daily work after three years in the profession and the characteristics of these strategies. The data material consists of qualitative interviews with 27 teachers. The study shows that the teachers manage stress through: a) openness with and support from colleagues and family, b) shielding and escape, c) learning established stress-coping strategies and d) planning, structuring, and lowering ambitions. The themes are discussed with theoretical concepts of problem-

emotion- and relationship-focused coping strategies. The study discusses the limitations of Norwegian teacher education related to the handling of work stress.

Keywords: Newly qualified teachers; stress management; problem-focused coping; emotion-focused coping; relationship-focused coping; stress-coping strategies

11. Myoung, E., & Liou, P. Y. (2022). Systematic review of empirical studies on international large-scale assessments of civic and citizenship education. *Scandinavian Journal of Educational Research*, 66(7), 1269–1291. <https://doi.org/10.1080/00313831.2022.2131903>

Abstract: This study investigated research trends in civic and citizenship education by systematically reviewing research regarding international frameworks for civic and citizenship education. We focused on major international large-scale assessments – specifically, the International Civic and Citizenship Education Study, and its predecessor, the Civic Education Study. Using four electronic databases, we analyzed 135 peer-reviewed journal articles. The analysis showed that differences among countries in research interests might be linked to different cultural backgrounds. It also showed that the greatest number of articles were published in social science disciplines, education research in particular. The results highlight the necessity of investigating principals’ and teachers’ perceptions of civic and citizenship education. Future research could focus on understudied variables such as adolescents’ civic participation, and home and peer civic education contexts, utilizing diverse variables from the ICCS 2016 data. By summarizing and discussing research trends, this study provides a blueprint for future research in the field of civic and citizenship education.

Keywords: Secondary analysis; systematic review; civic and citizenship education; ICCS; CIVED

SCHOOL EFFECTIVENESS AND SCHOOL IMPROVEMENT

1. Ma, X., Shen, J., Reeves, P., & Zhou, H. (2022). Effects of school renewal on school academic achievement: searching for a turning point. *School Effectiveness and School Improvement*, 33(4), 497–515. <https://doi.org/10.1080/09243453.2022.2052114>

Abstract: In this study, we applied the technique of piecewise linear regression to a total of 144 schools with the third to fifth grades, aimed to search for a turning point at each grade level in terms of the effects of school renewal on school reading and mathematics achievement. We did find a turning point for each school subject at each grade level, with two rather distinguished phenomena of patterns. In the climbing pattern, the effects before the turning point were not statistically significant but the effects after the turning point were statistically significant. In the fading pattern, the effects before the turning point were statistically significant but the effects after the turning point were not statistically significant. For both patterns, the effects before the turning point were statistically significantly different from the effects after the turning point.

Keywords: School renewal; academic achievement; turning point; piecewise regression

2. Heck, R. H., Reid, T., & Leckie, G. (2022). Incorporating student mobility in studying academic growth in math: comparing several alternative multilevel formulations. *School Effectiveness and School Improvement*, 33(4), 516–543. <https://doi.org/10.1080/09243453.2022.2060265>

Abstract: Increasing pupil mobility has led to widespread concern among parents, educators, and policymakers regarding its negative effects on academic performance. An important issue in examining mobility effects in longitudinal school achievement comparisons is providing accurate estimates. The presence of pupil mobility suggests that we should model pupils as belonging to the series of schools attended and not just their first or final school. We discuss several challenges in accounting for student mobility and, because of the presence of mobile pupils, how to represent the contribution of multiple schools attended on estimating academic growth properly. We then contrast several previous longitudinal multilevel models utilized with two cross-classified multiple membership (CCMM) models, which have been proposed to cumulate annual school effects on pupils' academic growth better given the complexity of the multilevel data structure. We discuss our results in terms of their theoretical and practical implications for research on school academic improvement.

Keywords: Student mobility; growth model; school improvement; cross-classified model; multiple membership model

3. Schult, J., Mahler, N., Fauth, B., & Lindner, M. A. (2022). Did students learn less during the COVID-19 pandemic? Reading and mathematics competencies before and after the first pandemic wave. *School Effectiveness and School Improvement*, 33(4), 544–563. <https://doi.org/10.1080/09243453.2022.2061014>

Abstract: The COVID-19 pandemic disrupted classes in spring 2020. Temporary school closures supposedly led to a considerable learning loss, particularly for low-

achieving students. Teachers faced challenges of remote learning environments. Students spent less time learning. The present study investigates the competencies of fifth graders in Baden-Württemberg, Germany, using large-scale assessments in reading and mathematics from annual mandatory tests in September (each $n > 80,000$). Competence scores were slightly lower in 2020 (after 2 months of school closures) compared with the three previous years ($-0.07 SD$ for reading comprehension, -0.09 for operations, and -0.03 for numbers). Regarding mathematics, low-achieving students seem to have a learning backlog that deserves attention in future education. School characteristics such as the average sociocultural capital and the proportion of students with a migration background played a minor role in mediating the schools' learning loss. Still, lower sociocultural capital was positively associated with larger learning loss in mathematics.

Keywords: COVID-19; school closures; mathematics competencies; reading competencies; large scale assessments

4. Klein, E. D., Bronnert-Härle, H., Boone, W. J., & Muslic, B. (2022). Constructs of leadership and diverging institutional environments: an exploratory comparative study in the United States and Germany. *School Effectiveness and School Improvement*, 33(4), 564–587. <https://doi.org/10.1080/09243453.2022.2069129>

Abstract: Past research has documented the relevance principals have for school improvement. However, how principals lead schools is dependent on institutional context. Furthermore, an international comparison of leadership might be susceptible to bias because the majority of leadership research is from Anglophone countries. The goal of the paper was to test whether constructs of “effective” leadership in international research are applicable to leadership practice in two contrasting institutional environments (United States and Germany). In both countries, teachers completed a leadership survey. Differences between the samples were analyzed utilizing Rasch analysis to evaluate potential differential item functioning. This was done to investigate differences in the way that items were viewed to define the construct as a function of sample. The findings indicate that leadership practices related to effectiveness and performativity were less pronounced in the German schools as opposed to the US schools, and leadership practices related to collaboration and participation were more pronounced.

Keywords: Principals; leadership; institutional environment; Germany; United States; international leadership research

5. Moore, R. (2022). Variation, context, and inequality: comparing models of school effectiveness in two states in India. *School Effectiveness and School Improvement*, 33(4), 588–609. <https://doi.org/10.1080/09243453.2022.2089169>

Abstract: Existing research on “school effectiveness” indicates that differences at the school level contribute significantly towards variation in student outcomes; however, less is known about the effectiveness of schooling in low- and middle-income countries (LMICs). This paper addresses this gap using quantitative analysis of data from two states in India. It compares four multilevel model specifications to explore how school performance can be measured in the Indian context. The analysis reveals a large “school effect”, while also offering evidence that a considerable proportion of

between-school variation stems from student intake. Findings suggest that school “value-added” models could offer better understanding of school performance and learning equity in India, and indicate the importance of recognizing how differences in model specification affect those schools identified as “more effective”.

Keywords: Indian education; school effectiveness; multilevel analysis; value added

6. Ion, G., & Sirvent, E. L. (2022). Teachers’ perception of the characteristics of an evidence-informed school: initiative, supportive culture, and shared reflection. *School Effectiveness and School Improvement*, 33(4), 610–628. <https://doi.org/10.1080/09243453.2022.2093921>

Abstract: The article analyses the characteristics of schools according to the perception teachers have regarding their commitment to using research evidence within their practice. A questionnaire focused on issues such as the use of research evidence to improve schools, as well as factors known to influence this practice, such as organizational culture, leadership style, interpersonal relationships, and decision-making processes, was administered to a sample of 462 teachers from 204 primary schools in two Spanish autonomous regions. The questionnaire responses were analysed using a two-stage factor analysis. Three clusters of schools were identified. Although teachers from a large number of schools were enthusiastic regarding the use of research evidence, others were sceptical, and most declared themselves undecided. In all cases, we observed that organizational commitment to the use of research evidence, leadership support, and debate regarding decisions were significant characteristics of those schools oriented towards the use of research evidence.

Keywords: Evidence-informed practice; primary teachers; primary schools; school culture

7. Appels, L., De Maeyer, S., Faddar, J., & Van Petegem, P. (2022). Capturing quality. Educational quality in secondary analyses of international large-scale assessments: a systematic review. *School Effectiveness and School Improvement*, 33(4), 629–668. <https://doi.org/10.1080/09243453.2022.2115519>

Abstract: The discourse of quality has permeated everyday discussions about education, yet the concept as such remains complex. Moreover, during the constant struggle to improve educational quality, governments have increasingly devoted attention to the results of international large-scale assessments. As those results are used to inform policy decisions to improve countries’ educational quality, it is important to understand how this concept of quality is appropriated. As a synthesis of how quality is conceptualised and operationalised in this body of research is lacking, the current paper seeks to fill that gap by presenting a systematic review. Our analysis identified definitional patterns and explored the corresponding methods for measuring quality. Based on this analysis of the reviewed studies, a framework of four approaches towards quality emerged to render the concept more accessible. In light of these results, benefits and limitations of the concept’s complexity are discussed, and implications for research are forwarded.

Keywords: Educational quality; conceptualization; operationalisation; international large-scale assessments; systematic review

TECHNOLOGY, PEDAGOGY AND EDUCATION

1. Arquero, J. L., Romero-Frías, E., & Del Barrio-García, S. (2021). The impact of flow, satisfaction and reputation on loyalty to MOOCs: the moderating role of extrinsic motivation. *Technology, Pedagogy and Education*, 31(4), 399–415. <https://doi.org/10.1080/1475939x.2021.2018031>

Abstract: Loyalty – users’ commitment to an institution or resource, involving its repeated use and recommending its use to others – and its explaining factors are of paramount importance in a Massive Open Online Course (MOOC), where participation is open and many actors with differing interests coexist. The present article tests a loyalty formation model by using satisfaction, flow state and reputation as explanatory factors. It also examines the role of extrinsic motivation (EM) as a potential moderator of inter-variable relationships. Data were gathered from questionnaires distributed to users of a MOOC offered by the University of Granada (Spain). Results indicate that EM plays an important moderating role in loyalty formation. Satisfaction, enjoyment and reputation are less important when EM is higher, whilst control appears to be more relevant to externally driven users. Practical implications include the recommendation to personalise users’ learning experience with different types of motivation in order to increase loyalty

Keywords: MOOCs, loyalty; satisfaction; flow; student motivation

2. Almeida, F., & Buzady, Z. (2022). Development of soft skills competencies through the use of FLIGBY. *Technology, Pedagogy and Education*, 31(4), 417–430. <https://doi.org/10.1080/1475939x.2022.2058600>

Abstract: Traditionally, serious games have been used in the development of hard skills, particularly in technical areas such as health, engineering, defence or the environment. However, they can also be applied in the assessment and development of soft skills, which are increasingly key competencies for an individual in the twenty-first century. In this sense, this study proposes the adoption of the FLIGBY serious game in a higher education institution to evaluate and develop students’ skills in this field. The findings indicate a large correspondence between the soft skills fundamental to the twenty-first century and the assessment dimensions recorded by the game. Furthermore, the findings reveal that FLIGBY can be used primarily to develop skills in dimensions such as leadership, conflict management, diplomacy and emotional intelligence. These findings are relevant for higher education institutions that intend to include and foster the development of soft skills competencies in their curricula.

Keywords: Serious game; FLIGBY; soft skills; higher education; leadership development

3. Bansah, A. K., & Darko Agyei, D. (2022b). Perceived convenience, usefulness, effectiveness and user acceptance of information technology: evaluating students’ experiences of a Learning Management System. *Technology, Pedagogy and Education*, 31(4), 431–449. <https://doi.org/10.1080/1475939x.2022.2027267>

Abstract: This study extended the technology acceptance model developed by Davis to examine the relationship among the variables: perceived convenience (PC), perceived effectiveness (PE), perceived usefulness (PU) and the extent to which they impact on students' user acceptance of a Learning Management System (LMS). A Questionnaire was used to collect data from 109 second- and third-year students who enrolled in a course via the LMS for the first time. Regression and correlation analyses were used to explore the variables of the study. The results revealed that PC, PU and PE were antecedent factors that affected user acceptance of the LMS, PC being the best predictor of user acceptance. Perceived convenience also correlated positively with both PU and PE, the relationship being more pronounced between PC and PU. Implications of the results for scaling up or replicating the LMS initiative in the study context or in institutions with similar contexts are discussed.

Keywords: Technology user acceptance; perceived convenience; perceived effectiveness; perceived usefulness

4. Goundar, S., Deb, A., Lal, G., & Naseem, M. (2022). Using online student interactions to predict performance in a first-year computing science course. *Technology, Pedagogy and Education*, 31(4), 451–469. <https://doi.org/10.1080/1475939x.2021.2021977>

Abstract: Student performance is a critical factor in determining a university's reputation because it has a negative effect on student retention. Students who do not perform well in a course are more likely to drop out from their programmes before graduating. Many students who enrol in Computing Science programmes struggle to find success because it is considered a difficult discipline. In this study, a sample of 918 observations were selected containing demographic and academic information about students enrolled in a first-year undergraduate Computing Science course at a university. Classification algorithms such as Decision Tree, Random Forest, Naïve Bayes and Support Vector Machine were used to build predictive models to determine whether a student will pass or fail the course. The results showed the Random Forest algorithms are capable of producing better predictive performance compared with traditional Decision Tree algorithms.

Keywords: Predictive analytics; data mining; classification algorithms; random forest algorithm; decision trees

5. Araiza-Alba, P., Keane, T., & Kaufman, J. (2022). Are we ready for virtual reality in K–12 classrooms? *Technology, Pedagogy and Education*, 31(4), 471–491. <https://doi.org/10.1080/1475939x.2022.2033307>

Abstract: Virtual reality technology has existed since the late 1950s; however, its use in the educational sector has been limited because of the cost of the equipment, inaccessibility of the technology, issues of usability, and lack of appropriate educational content and educator training. New technological advances have resolved some of these limitations. Additionally, affordable virtual reality equipment that has been predominately used with adults shows compelling results, highlighting the potential of this technology when used with children for educational purposes. This article presents an overview of immersive virtual reality's potential as a learning tool with children, highlighting its current uses, research with children for educational

purposes, and the existing barriers for the applicability and implementation of immersive virtual reality in school settings.

Keywords: Immersive virtual reality; educational technology; learning; K-12 education

6. Klunder, S., Saab, N., & Admiraal, W. (2022). A teacher perspective on using a hybrid virtual classroom for students with a chronic illness in mainstream primary and secondary schools. *Technology, Pedagogy and Education*, 31(4), 493–508. <https://doi.org/10.1080/1475939x.2022.2033824>

Abstract: Teachers' beliefs and experiences were explored when using videoconferencing at mainstream schools to provide distance learning to students with a chronic illness (SCIs) in a hybrid virtual classroom (HVC). Seventy-seven primary and secondary teachers participated in this study, involving a semi-structured interview and a survey. Teachers found the HVC useful to achieve continuity of learning, to support the social well-being of SCIs and to facilitate school re-entry. A multiple regression analysis showed that perceived usefulness and the actions teachers undertook to foster collaboration and communication between SCIs and their school were related to perceived engagement of SCIs. Primary school teachers enhanced significantly more activities to support interaction between SCIs and their classmates than secondary school teachers.

Keywords: Hybrid virtual classroom; students with chronic illness; mainstream schools; teachers; education and well-being

7. Wang, J., Tigelaar, D. E. H., & Admiraal, W. (2022). From policy to practice: integrating ICT in Chinese rural schools. *Technology, Pedagogy and Education*, 31(4), 509–524. <https://doi.org/10.1080/1475939x.2022.2056504>

Abstract: Research has often ignored the complex systemic nature of ICT integration in education, including the importance of the historical, social and political context. This study examines the content of local ICT policy plans that have been developed and how school leaders and teachers perceive their experience with ICT practices of rural schools. A mixed-method research approach was applied, involving 25 rural schools in Western China. Data was collected from multiple sources (policy documents, interviews with school leaders, focus groups with teachers, classroom observations, an ICT inventory and a teacher survey). The results revealed three types of challenges for ICT integration in rural schools: (1) guidance and learning opportunities as a political challenge, (2) ICT infrastructure and digital content as a technical challenge, and (3) teacher training and technical support as a human challenge. These challenges have implications for policymakers and practitioners when improving rural education through ICT integration.

Keywords: Policy plans; ICT integration; rural education; pedagogical use of ICT

8. Straker, L. M., Harris, C. J., Joosten, J., & Howie, E. K. (2022). Academic implications of screen use and sedentary behaviour in a school with a 1-to-1 device policy. *Technology, Pedagogy and Education*, 31(4), 525–539. <https://doi.org/10.1080/1475939x.2022.2050288>

Abstract: Schools are implementing 1-to-1 device policies, and as a result students are increasingly using mobile devices for multiple purposes. This use is in addition to other sedentary behaviours. The purpose of this study was to examine the associations between different types of sedentary behaviours, including technology use by device type and purpose, with academic achievement. School children ($n = 934$) in grades 5 through 12 at an Australian school with a 'bring-your-own' device policy completed a survey on sedentary behaviours and technology use. Mean total sedentary time was 12.9 (SD 8.7) hours per day, and mean screen use was 6.7 (SD 5.7) hours per day. Duration of technology use for nearly all devices and all purposes (except some school work) was negatively associated with academic performance, though the relationships were often non-linear. Support is needed for children to develop wise habits of technology use and overall sedentary behaviours.

Keywords: Elementary education; secondary education; media in education

TEACHING AND TEACHER EDUCATION

1. Boysen, M. S. W., Sørensen, M. C., Jensen, H., Von Seelen, J., & Skovbjerg, H. M. (2022). Playful learning designs in teacher education and early childhood teacher education: A scoping review. *Teaching and Teacher Education*, 120, 103884. <https://doi.org/10.1016/j.tate.2022.103884>

Abstract: Play and its relation to children's learning and development is thoroughly described in the research literature. However, the application and implication of play in higher education (HE) appears to be less systematically addressed. This article presents a scoping review of playful learning (PL) in teacher education (TE) and early childhood teacher education (ECTE). The review indicates that the relationship between curricular learning goals and PL is often vaguely described, whereas generic competencies and motivation are in focus. Further, the theoretical grounding of PL appears ambiguous. At the end of the article, implications for future research and PL designs in HE are discussed.

Keywords: Scoping review, Playful learning, Teacher education, Early childhood teacher education

2. Stoddart, A. L., & Selanders, K. P. (2022). Preparing for physical literacy: Exploring pre-service teachers' training and understanding. *Teaching and Teacher Education*, 120, 103886. <https://doi.org/10.1016/j.tate.2022.103886>

Abstract: Research has indicated some pre-service teachers have a poor understanding of physical literacy. As pre-service teachers will be expected to assist their future students in developing physical literacy, it is imperative that they are trained and supported to do so. This Canadian explanatory sequential study explored how pre-service teachers understand physical literacy, its place in the physical education curriculum, and whether more support is needed during their teacher preparation program. Data collection occurred in one province during 2018–2021. Phase 1 of the study included 51 participants, with six participants engaged in follow-up interviews in Phase 2. The Phase 1 analysis included chi-square analyses and frequency tabulations. Phase 2 data was analyzed using thematic analysis. Findings suggest that pre-service teachers are aware of physical literacy but need more support from Physical Education Teacher Education programs to authentically bring physical literacy to life.

Keywords: Physical education teacher education, Physical education, Curriculum

3. Reinius, H., Kaukinen, I., Korhonen, T., Juuti, K., & Hakkarainen, K. (2022). Teachers as transformative agents in changing school culture. *Teaching and Teacher Education*, 120, 103888. <https://doi.org/10.1016/j.tate.2022.103888>

Abstract: This interview study examined the transformative professional agency of expert teachers selected to perform city-wide innovator and developer roles in the context of digital school transformations in Helsinki, Finland. Our analysis revealed that exploring and developing a novel digital pedagogy in one's own teaching was considered the core of their innovation activity. The insights and know-how developed through classroom innovation enabled productive participation in school-

and city-level innovation activities. Working in thematic expert teacher teams generated ideas for supporting local innovation activity. Moreover, the interviews elucidated the epistemic, social, and organizational factors that enabled or hindered innovative professional activity.

Keywords: Digitalization, Innovative professional activity, Instructional coaching, Professional development, School culture, Transformative professional agency

4. Cleovoulou, Y., Iznardo, M., & Kamani, F. (2022). An examination of equity pedagogy during program coherence building in teacher education. *Teaching and Teacher Education*, 120, 103866. <https://doi.org/10.1016/j.tate.2022.103866>

Abstract: This article shares results from a larger, longitudinal study on program coherence and illustrates one teacher education program's efforts to implement equity pedagogy across the program. Equity pedagogy was found in organic planning processes, throughout the learning environment, and in course content and designs. Equity pedagogy developed from collaborative practices, critical reflection, and a caring community; these being three key tenets of the program's vision and values. Contributions to the literature include: detailed, descriptive examples of challenges and strategies for equity-based pedagogy and empirical analysis of a university program's attempts to develop equity-minded teachers located in a child centered teacher education program.

Keywords: program coherence, equity based pedagogy, community of care, Teacher education, elementary schooling

5. Olfos, R., Vergara-Gómez, A., Estrella, S., & Goldrine, T. (2022). Impact of a theory-practice connecting scaffolding system on the ability of preschool teachers-in-training to teach mathematics. *Teaching and Teacher Education*, 120, 103887. <https://doi.org/10.1016/j.tate.2022.103887>

Abstract: This study investigated the impact of a scaffolding system that connects theory and practice to promote the development of the ability to teach mathematics in 100 future Chilean preschool teachers. The theoretical dimension and the practical dimension of both mathematical content knowledge (MCK) and mathematical pedagogical content knowledge (MPCK) were analysed. Data were collected and analysed following a mixed approach. The results of the study reveal the effectiveness of the system in the theoretical dimension and the difficulties that arise in classroom practices. The critical role of the specialized components of MPCK in the theory-practice articulation is discussed.

Keywords: Mathematical content knowledge, Preschool teacher education, Pedagogical content knowledge, Mathematics education, Theory and Practice

6. Liu, Y., & Benoliel, P. (2022). “National context, school factors, and individual teacher characteristics: Which matters most for teacher collaboration?” *Teaching and Teacher Education*, 120, 103885. <https://doi.org/10.1016/j.tate.2022.103885>

Abstract: Merging the variables from the 2018 TALIS, the 2018 PISA, and the 2004 GLOBE study, the present research investigates the associations between contextual

variables and teacher collaboration across national boundaries, which is essential to understand teacher collaboration in a broader context. Employing multi-level linear models, this study specified the variance in teacher collaboration related to teacher characteristics, school factors, and country policy and cultural variations, respectively. The results revealed that the teacher-level factors are associated with a significant proportion of variance in the outcome. Meanwhile, school culture, leadership, student composition, and country-level policy are influential for teacher collaboration.

Keywords: Teacher collaboration, International evidence, Large scale dataset, National context, School factors and individual characteristics

7. Tekkumru-Kisa, M., Coker, R., & Atabas, S. (2022). Learning to teach for promoting student thinking in science classrooms. *Teaching and Teacher Education*, 120, 103869. <https://doi.org/10.1016/j.tate.2022.103869>

Abstract: As part of a larger effort to support pre-service teachers' learning to develop ambitious teaching, we explored how pre-service teachers came to develop teaching practices for promoting demand on student thinking. We focused on five pre-service teachers' lesson planning, implementation of, and reflections on a science lesson in a methods course and the interviews during their internship. Our analysis revealed a variation in pre-service teachers' orientations to students' ideas. These patterns were consistent with how they facilitated demand on student thinking in their teaching and their appropriation of the pedagogical tools for promoting cognitive demand on student thinking.

Keywords: Appropriation, Student thinking, Orchestrating discussion, Rigorous teaching, Pre-service teacher learning, Quality classroom talk

8. Salinas, D., & Garrido, C. G. (2022). Teacher educators' adaptability process when faced with remote teaching. *Teaching and Teacher Education*, 120, 103890. <https://doi.org/10.1016/j.tate.2022.103890>

Abstract: The present research explores how Teacher Educators (TEs) have adapted to remote teaching due to the world pandemic in light of their emotions, cognition, and praxis. Grounded theory was used to analyse the data from 72 TEs and the instruments to collect data were 2 semi-structure interviews having a 10-month time span between the first and second interview. Results show that a cognitive-emotional interplay featured by uncertainty, anguish and challenge was the driving force for their praxis in their adaptation process which was influenced by TEs' lack of technological competences.

Keywords: Adaptability, Teacher educator, Grounded theory, Cognitive/emotion interplay, Technology competence

9. İnceçay, V., & Dikilitaş, K. (2022). Online peer observation: Reflections on a process-based job-embedded professional development activity through video recordings. *Teaching and Teacher Education*, 120, 103901. <https://doi.org/10.1016/j.tate.2022.103901>

Abstract: Guided by the sociocultural approach to teacher learning, this collective case study describes in-depth online peer observation experiences of six English

language teachers and how they reflected on the scheme carried out for a semester at a university. Data were collected via an interest analysis form, 24 reflective diaries, 24 video recordings of pre- and post-observation meetings, and two experience sharing day colloquiums. Thematic analysis was conducted to reveal emerging themes and codes. OLPO led the participants to telecollaborate, scrutinize their online classes, offer solutions for improved teaching, test these solutions in their practices, and reflect on the whole process.

Keywords: Collaborative development, Collegiality and critical friendship, Online peer observation, Pedagogical online solitude, Teacher development

10. Hu, H., & Sperling, R. A. (2022). Pre-service teachers' perceptions of adopting digital games in education: A mixed methods investigation. *Teaching and Teacher Education, 120*, 103876. <https://doi.org/10.1016/j.tate.2022.103876>

Abstract: One hundred and one pre-service teachers were exposed to game examples, a series of questions, and teaching scenarios that required games. A mixed methods analysis revealed that they perceived educational and commercial-off-the-shelf (COTS) games as equally valuable to instruction, games should predominantly be implemented after a formal lesson, and limited instructional time was the main barrier to adopting games. Our findings uncovered the need for teacher preparation programs to inform pre-service teachers of the critical advantages of educational games, the variety of research-based game-adoption approaches, and the effective strategies to overcome barriers when incorporating games into instruction.

Keywords: Educational games, Commercial-off-the-shelf games, Teacher preparation programs, Pre-service teacher's perceptions

11. Adams, T., Koster, B., & Brok, P. D. (2022). Patterns in student teachers' learning processes and outcomes of classroom management during their internship. *Teaching and Teacher Education, 120*, 103891. <https://doi.org/10.1016/j.tate.2022.103891>

Abstract: Student teachers' classroom management (CM) learning is an important aspect of their teacher education internship. What is still unknown, however, is what the effect of workplace learning is on this development. This study focused on CM learning of 24 student teachers during their internship, looking at their CM goals, CM learning processes, the CM learning outcomes and the interrelationships between these. Four patterns of student teachers' CM learning processes were found. Moreover, student teachers showed attention for a variety of different CM elements in their learning goals. Similar CM outcomes in terms of knowledge and skills were found in the four patterns. Concerning attitude as an CM outcomes, one statistically significant relation was found between CM learning profile and attitude as a learning outcome. Furthermore, student teachers developed their attitude in terms of 'value of (non-) verbal communication and teacher behavior'.

Keywords: Classroom management, Teacher education curriculum, Workplace learning

12. Yorkovsky, Y., & Levenberg, I. (2022). Distance learning in science and mathematics – Advantages and disadvantages based on pre-service teachers' experience. *Teaching and Teacher Education*, 120, 103883. <https://doi.org/10.1016/j.tate.2022.103883>

Abstract: The rapid transition to distance learning during the COVID-19 pandemic occurred without an in-depth examination of its characteristics and implications on science and mathematics teaching and learning. Pre-service science and mathematics teachers completed a questionnaire designed to reveal their preferences of synchronous and asynchronous distance learning compared to frontal learning. Findings indicate a clear preference for frontal learning while synchronous learning was least preferred. The main disadvantages of synchronous learning noted were understanding the content, technical problems, interacting with the lecturer, and means of illustration. Preferences were also examined with respect to mother tongue, year of college, and discipline grade-point average.

Keywords: Distance learning, Math education, Pre-service teachers, Science education, Synchronous and asynchronous learning

13. Patterson, T., Bridgell, I., & Kaplan, A. (2022b). Becoming a social studies teacher: An integrative systems perspective on identity content, structure, and processes. *Teaching and Teacher Education*, 120, 103899. <https://doi.org/10.1016/j.tate.2022.103899>

Abstract: In this scoping study we synthesize the last two decades of research on social studies teacher identity ($N = 114$) to identify salient themes. Findings indicate an interest in an array of teacher identities: ethnic and cultural identities, sexual orientation, identities vis-à-vis curricular content and purposes, and civic values and beliefs. However, limited studies attempt to integrate these diverse identity features into a coherent model of teacher identity that recognizes the interplay of these priorities. We propose an integrative framework that conceptualizes social studies teacher identity as a complex dynamic system of interdependent role-specific elements and contextualized emergent meanings.

Keywords: Identities, Social studies, Complex dynamic systems

14. Lawrent, G. (2022). Teacher ethics in the Tanzanian context and their implications. *Teaching and Teacher Education*, 120, 103900. <https://doi.org/10.1016/j.tate.2022.103900>

Abstract: Evidence about how teachers' unethical practices shape and reshape their professional lives is scarcely available. This study employed a qualitative approach in order to gain insights into the extent to which the ethical scandals of teachers affect their profession. Document analysis was undertaken, and 18 respondents from one of the regions in the Southern Highlands of Tanzania were interviewed. Findings indicated that teachers' misconduct compromised their social positioning in terms of their trust and respect, as well as their image of teaching. The article proposes strategies that can enhance the perceived professional well-being of teachers and areas for further investigation.

Keywords: Teacher ethics, Teacher profession, Secondary education expansion, Teacher education, Teacher professionalism

15. Göbel, K., Bönnte, J., Gösch, A., & Neuber, K. (2022). The relevance of collegial video-based reflection on teaching for the development of reflection-related attitudes. *Teaching and Teacher Education*, *120*, 103878. <https://doi.org/10.1016/j.tate.2022.103878>

Abstract: The paper presents results from a quasi-experimental study which explores collegial video-based reflection on teaching of pre-service teachers ($N = 83$; 54 female (65.1%); $M_{\text{age}} = 24.64$), during their practical semester in a teacher education program in Germany. Findings reveal an improvement in attitudes toward reflection on teaching in general. An improvement in attitudes toward feedback and video-based reflection was achieved in the intervention group reflecting on their own teaching videos. Findings indicate that collegial reflection on own teaching videos offers a benefit for the development of reflection related attitudes in teacher education.

Keywords: Collegial reflection, Reflection-related attitudes, Teacher education, Video-based reflection, Practical phases in teacher education, Peer reflection, Quasi-experimental design

16. Kite, V., & Park, S. (2022). Preparing inservice science teachers to bring unplugged computational thinking to their students. *Teaching and Teacher Education*, *120*, 103904. <https://doi.org/10.1016/j.tate.2022.103904>

Abstract: Computational thinking (CT) is critical for Twenty-first century life. Ensuring equitable access to CT depends on preparing teachers to integrate CT into disciplinary curricula. We report on the design, evaluation, and outcomes of the Computational Thinking Unplugged for Science (CT-UP-S) professional development program for inservice science teachers. Our process-based approach to CT significantly improved teachers CT understanding and CT/science integration self-efficacy by systematically linking CT practices to scaffold the generation of unplugged algorithms. Additionally, we found that the process-based approach provided a framework for teachers' lesson planning and that teachers' content knowledge moderated their ability to write CT-integrated science lessons.

Keywords: Computational thinking, Computational thinking integration, Science education, Teacher professional development, Unplugged

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