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Acquisition de compétences

Alarcón, R., Jiménez, E. del P., & Vicente-Yagüe, M. I. de. (2020). **Development and validation of the DIGIGLO, a tool for assessing the digital competence of educators**. *British Journal of Educational Technology*, *51*(6), 2407-2421. https://doi.org/10.1111/bjet.12919
Educators must be able to adapt to the opportunities provided by information and communication technologies, making use of those which are best suited to meeting their students' needs and identifying areas of practice in which they themselves need to develop their skills. The European Framework for the Digital Competence of Educators (DigCompEdu) proposes 22 basic competences, organised into six areas, which educators should ideally acquire. The present study seeks to build on this Framework by developing and validating an assessment tool that considers a total of eight areas: the six areas covered by DigCompEdu and two new areas corresponding to extrinsic factors in the digital competence of educators. The latter refers specifically to the digital resources and support services that are available to educators in their working environment. A total of 509 teacher educators from across Spain and Latin America completed the 29-item DIGIGLO questionnaire. Analysis of the Spanish language instrument's construct validity and psychometric properties showed it to be a valid and reliable tool for assessing the digital competence of educators across the eight areas considered.

Banque mondiale. (2020). ***Tunisia - skills development for employment: the role of technical and vocational education and training***. Consulté à l'adresse http://documents1.worldbank.org/curated/en/465581593566209488/pdf/Tunisia-Skills-Development-for-Employment-The-Role-of-Technical-and-Vocational-Education-and-Training.pdf
Outre le chômage élevé (en globalité et chez les jeunes), le marché du travail tunisien se caractérise par des emplois de qualité médiocre, de faibles salaires et un niveau important d'emplois informels. Pour accroître la productivité du travail, le gouvernement tunisien a initié en 2012 une stratégie de réforme de l'enseignement et de la formation techniques et professionnels (EFTP). Celle-ci met l'accent sur le rôle des secteurs privé et public dans l'adaptation de l'EFTP aux besoins du marché. L'EFTP peut contribuer à l'inclusion des jeunes mais il n'est pas très bien considéré, à la fois à cause des défaillances de la gouvernance, du manque d'informations et de la pénurie des systèmes de pilotage et d'évaluation.

Bart, D., & Daunay, B. (2020). **La littératie dans le Programme international de suivi des acquis des élèves (PISA) : entre sens propre et monde figuré**. *Les dossiers des sciences de l'éducation*, (43), 63-79. Consulté à l'adresse https://journals.openedition.org/dse/

Bocquillon, M., Gauthier, C., Bissonnette, S., & Derobertmasure, A. (2020). **Enseignement explicite et développement de compétences : antinomie ou nécessité?** *Formation et profession*, *28*(2), 3. https://doi.org/10.18162/fp.2020.513

Dezutter, O., & Lépine, M. (2020). **La littératie, une vision élargie du savoir lire-écrire. Quelles conséquences pour l'enseignement du français ?** *Les dossiers des sciences de l'éducation*, (43), 33-46. Consulté à l'adresse https://journals.openedition.org/dse/

Dupont, P. (Éd.). (2020). **La constitution de l'espace conceptuel de la littératie en éducation**. *Les dossiers des sciences de l'éducation*, (43), 9-31. Consulté à l'adresse https://journals.openedition.org/dse/

Dupont, P., & Dezutter, O. (Éd.). (2020). **La littératie. Un espace conceptuel pour l'enseignement et l'éducation (Dossier)**. *Les dossiers des sciences de l'éducation*, (43), 7-113. Consulté à l'adresse https://journals.openedition.org/dse/

Foster, T. J., Burchinal, M., & Yazejian, N. (2020). **The Relation Between Classroom Age Composition and Children's Language and Behavioral Outcomes: Examining Peer Effects**. *Child Development*, *91*(6), 2103-2122. https://doi.org/10.1111/cdev.13410
Grouping children of different ages in the same preschool classroom (i.e., mixed age) is widespread, but the evidence supporting this practice is mixed. A factor that may play a role in the relation between classroom age composition and child outcomes is peer skill. This study used a sample of 6,338 preschoolers (ages 3–5) to examine the influence of both classroom age composition and peer skill on children's behavioral and language outcomes. Results supported the growing literature indicating preschoolers' skills are higher when peer skill is higher, but differences related to classroom age composition were not found. These findings further support the view that peer skill plays an important role in preschool children's outcomes.

HAMILTON, L. S., & DOSS, C. J. (2020). ***Supports for social and emotional learning in American schools and classrooms: findings from the American teacher panel***. Consulté à l'adresse https://www.rand.org/content/dam/rand/pubs/research_reports/RRA300/RRA397-1/RAND_RRA397-1.pdf
Ce rapport présente les résultats d'une enquête menée aux Etats-Unis auprès d'un échantillon représentatif à l'échelle nationale d'enseignants des écoles publiques de la maternelle à la 12e année (K-12) sur leurs approches pour soutenir l'apprentissage social et émotionnel des élèves (SEL). Une majorité d'enseignants expriment leur confiance dans le fait qu'ils pourraient améliorer les compétences sociales et émotionnelles des élèves. Les trois quarts ont bénéficié d'un programme de perfectionnement professionnel abordant le SEL au cours de l'année scolaire 2018-2019. Les enseignants du primaire ont déclaré des niveaux plus élevés de soutien scolaire pour le SEL que les enseignants du secondaire.

HOSKINS, B., & LIU, L. (2020). ***Measuring life skills in the context of life skills and citizenship education in the Middle East and North Africa***. Consulté à l'adresse https://www.unicef.org/mena/media/7011/file/Measuring%20life%20skills_web.pdf.pdf
Que sont les compétences de vie ? Comment enseigner les compétences de vie ? Comment les évaluer ? Réalisé dans le cadre de l'initiative LSCE (Life skills and citizen education), ce rapport s'efforce de répondre à ces questions en passant en revue les instruments disponibles pour mesurer les compétences de vie. Il propose également une réflexion sur la manière dont ces compétences de vie peuvent être efficacement enseignées. L'objectif ultime de l'amélioration de la mesure des compétences de vie est de faciliter l'intégration de ces compétences dans les systèmes éducatifs par le biais de programmes et d'évaluations et de développer une meilleure compréhension du niveau des compétences de vie acquises.

Kumps, A., Temperman, G., & Le Lièvre, B. (2020). **Développer des compétences réceptives en langue maternelle à partir de cercles collaboratifs d'écoute**. *Les dossiers des sciences de l'éducation*, (43), 115-134. Consulté à l'adresse https://journals.openedition.org/dse/

LaBrot, Z. C., Dufrene, B. A., Whipple, H., McCargo, M., & Pasqua, J. L. (2020). **Targeted and Intensive Consultation for Increasing Head Start and Elementary Teachers' Behavior-Specific Praise**. *Journal of Behavioral Education*, *29*(4), 717-740. https://doi.org/10.1007/s10864-019-09342-9
School-based consultation is effective for improving teachers' use of evidence-based classroom management strategies. However, teachers often respond differentially to varying types of consultation strategies. This study utilized a multiple baseline design across four teachers (i.e., two preschool and two elementary) to examine the effectiveness of a tiered consultation model for increasing teachers' rate of behavior-specific praise and concomitant child outcomes. Tiers in this study included large-group didactic training (Tier 1), digital performance feedback (Tier 2), and a tactile prompt (Tier 3). Results indicated that three of four teachers increased their rate of behavior-specific praise during Tier 2 consultation, with two maintaining following termination of Tier 2 consultation. One teacher required Tier 3 consultation, which resulted in increased rates of behavior-specific praise. Furthermore, results indicated that children's display of appropriately engaged behavior increased and disruptive behavior decreased in three of the four classrooms. Implications for practice, limitations, and directions for future research are discussed.

Lortet, A. (2020). **Métaphore cladistique appliquée à la structure des problématiques**. *Les dossiers des sciences de l'éducation*, (43), 135-151. Consulté à l'adresse https://journals.openedition.org/dse/

Marx, L. (2020). **À quoi sert l'éducation artistique et culturelle ?** *Edubref*. Consulté à l'adresse https://f-origin.hypotheses.org/wp-content/blogs.dir/464/files/2020/11/Edubref-octobre-2020.pdf
Le 8e numéro d'Edubref, ces documents illustrés de quatre pages pour permettre une première entrée dans les recherches sur une thématique éducative, porte sur l'éducation artistique et culturelle (EAC). Entre les sorties au cinéma, les visites scolaires au musée, les interventions d'artistes dans les classes ou encore les ateliers de création théâtrales, les activités artistiques et culturelles sont omniprésentes dans l'école. Si les discours semblent généralement unanimes en leur faveur, les pratiques sur le terrain varient fortement. Quels sont les objectifs poursuivis, quelle est leur histoire ? Quels effets sur les élèves, et quelle articulation avec leurs pratiques extrascolaires ? Quelles interactions avec des institutions culturelles, avec des artistes ?

Moreau, A. C., Ruel, J., & Messier, G. (2020). **Proposition d'une conceptualisation coconstruite de la littératie : résultat d'une recherche-développement**. *Les dossiers des sciences de l'éducation*, (43), 47-61. Consulté à l'adresse https://journals.openedition.org/dse/

Myre-Bisaillon, J., & Chalifoux, A. (2020). **Littératie familiale : des conditions favorables au développement de pratiques en milieu vulnérable**. *Les dossiers des sciences de l'éducation*, (43), 81-98. Consulté à l'adresse https://journals.openedition.org/dse/

Poulet, M.-C. (2020). **Auctorialité et auctorialisation scientifiques : pour un accompagnement des étudiants à l'aune du concept de littéracies universitaires**. *Les dossiers des sciences de l'éducation*, (43), 99-113. Consulté à l'adresse https://journals.openedition.org/dse/

Touhami, S. (2020). ***L'enseignement des Soft Skills à l'Université au Maroc :: levier de compétences pour les jeunes diplômés***. Consulté à l'adresse https://www.editions-harmattan.fr/livre-9782343209975?utm_source=phplist&utm_campaign=message_30267&utm_medium=email&utm_content=lienTitre
Communication, aptitude linguistique en langue étrangère, sens de créativité, écoute active, leadership, gestion du projet, entrepreneuriat, esprit d'équipe, intelligence émotionnelle, ces compétences clés, appelées désormais Soft Skills, n'ont pas la place qu'elles méritent dans le descriptif des formations pédagogiques au Maroc. Cette recherche collective apporte un éclairage nouveau sur la problématique de l'intégration des Soft Skills dans le système éducatif marocain : quels avantages, quelles contraintes, quels enjeux et quelles recommandations à mettre en place pour booster l'employabilité des jeunes diplômés.

Aspects économiques de l'éducation

Aizer, A., Devereux, P. J., & Salvanes, K. G. (2020). **Grandparents, Moms, or Dads? Why Children of Teen Mothers Do Worse in Life**. In *IZA Discussion Papers* (N° 13781). Consulté à l'adresse Institute of Labor Economics (IZA) website: https://ideas.repec.org/p/iza/izadps/dp13781.html
Women who give birth as teens have worse subsequent educational and labor market outcomes than women who have first births at older ages. However, previous research has attributed much of these effects to selection rather than a causal effect of teen childbearing. Despite this, there are still reasons to believe that children of teen mothers may do worse as their mothers may be less mature, have fewer financial resources when the child is young, and may partner with fathers of lower quality. Using Norwegian register data, we compare outcomes of children of sisters who have first births at different ages. Our evidence suggests that the causal effect of being a child of a teen mother is much smaller than that implied by the cross-sectional differences but that there are probably still significant long-term, adverse consequences, especially for children born to the youngest teen mothers. Unlike previous research, we have information on fathers and find that negative selection of fathers of children born to teen mothers plays an important role in producing inferior child outcomes. These effects are particularly large for mothers from higher socio- economic groups. Our data also enable us to examine the effect of age at first birth across a range of maternal ages. Importantly, while we find that child outcomes are worst for those born to teen mothers, outcomes improve with mothers' age at first birth until mothers are in their mid-20s and then flatten out.

Andrén, D., & Pettersson, N. (2020). ***Studying continuously during an university course – with experiences from the impact of the coronavirus COVID-19***. Consulté à l'adresse Örebro University, School of Business website: https://EconPapers.repec.org/RePEc:hhs:oruesi:2020_012
Online teaching and online learning have been studied for many years with focus on both the inputs and outputs, but seldom on outcomes such as the well-being of the

students and/or teachers. Therefore, we already know that good outputs in forms of grades are strongly correlated with a clear and robust instructional design and planning, using a systematic model for design and development, but we still know very little about the well-being of the students and/or teachers. Our paper provides insights on the content and the functionalities of our sustainable educational approach (SEA) designed to both facilitate online learning and online collaboration and to motivate students to study and learn continuously, which proved to facilitate a smooth shift to online teaching and learning to stop the spreading of Coronavirus COVID-19 during Spring 2020. Using a sample of students registered for a course in elementary statistics during 2016-2020, we present empirical evidence for the positive short-term effects of using the SEA on the students' grades and their individual well-being.

Asongu, S. A., & Odhiambo, N. M. (2020). **The role of governance in quality education in sub-Saharan Africa**. In *Working Papers* (N° 20/077). Consulté à l'adresse European Xtramile Centre of African Studies (EXCAS) website: https://ideas.repec.org/p/exs/wpaper/20-077.html
This paper examines the governance-â€œeducation qualityâ€ nexus in a panel of 49 sub-Saharan African countries over the period 2000-2012. Ordinary Least Squares (OLS) and Quantile regression (QR) are employed as estimation strategies. The following findings are established. First, from the OLS, governance variables are negatively correlated with poor education quality. Second, with regards to QR, about half of the governance dynamics are not significantly correlated with poor education quality in the lowest quantile of poor education quality. With the exception of corruption-control, the other governance dynamics are negatively correlated with poor education quality in a non-monotonic pattern.

Bach, M., & Sievert, S. (2019). **Birth Cohort Size Variation and the Estimation of Class Size Effects**. In *Discussion Papers of DIW Berlin* (N° 1817). Consulté à l'adresse DIW Berlin, German Institute for Economic Research website: https://ideas.repec.org/p/diw/diwwpp/dp1817.html
We present evidence that the practice of holding back poorly performing students affects estimates of the impact of class size on student outcomes based on within-school variation of cohort size over time. This type of variation is commonly used to identify class size effects. We build a theoretical model in which cohort size is subject to random shocks and students whose performance falls below a threshold are retained. Our model predicts that initial birth cohort size is mechanically related to the grade-level share of previously retained students once these cohorts reach higher grades. This compositional effect gives rise to an upward bias in class size effects exploiting variation in birth cohort size. Using administrative data on school enrollment for all primary schools in one federal state of Germany, we find support for this compositional effect. Correcting for the resulting bias in a unique dataset on standardized test scores for the full student population of third graders, we find that not only are smaller classes beneficial for language and math test scores, but also for reducing grade repetition.

Bütikofer, A., Ginja, R., Landaud, F., & Loken, K. V. (2020). **School Selectivity, Peers, and Mental Health**. In *IZA Discussion Papers* (N° 13796). Consulté à l'adresse Institute of Labor Economics (IZA) website: https://ideas.repec.org/p/iza/izadps/dp13796.html
Although many students suffer from anxiety and depression, and students often identify school pressure and concerns about their futures as the main reasons for their worries,

little is known about the consequences of a selective school environment on students' physical and mental health. In this paper, we draw on rich administrative data and the features of the high school assignment system in the largest Norwegian cities to consider the long-term consequences of enrollment in a more selective high school. Using a regression discontinuity analysis, we show that eligibility to enroll in a more selective high school increases the probability of enrollment in higher education and decreases the probability of diagnosis or treatment by a general medical practitioner for psychological symptoms and diseases. We further document that enrolling in a more selective high school has a greater positive impact when there are larger changes in the student–teacher ratio, teachers' age, and the proportion of female teachers. These findings suggest that changes in teacher characteristics are important for better understanding the effects of a more selective school environment.

Dasgupta, U., Mani, S., Sharma, S., & Singhal, S. (2020). **Social Identity, Behavior, and Personality: Evidence from India**. In *IZA Discussion Papers* (No 13515). Consulté à l'adresse Institute of Labor Economics (IZA) website: https://ideas.repec.org/p/iza/izadps/dp13515.html
Hierarchies in social identities have been found to be integrally related to divergences in economic status. In India, caste is one such significant social identity where continued discriminatory practices towards the lower castes have resulted in poor outcomes for them. While there is considerable work on such divergence on many economic outcomes along caste lines, there is no work on behavioral preferences and personality traits that can also be adversely affected by such identity hierarchies, and that are important determinants of educational attainments and labor market performances. We combine rich data from incentivized tasks and surveys conducted among a large sample of university students in a Seemingly Unrelated Regression framework and find that the historically marginalized Scheduled Castes and Scheduled Tribes (SCSTs) and Other Backward Classes (OBCs) fare worse than the upper castes along several dimensions of economic behavior such as competitiveness and confidence and personality traits such as grit, locus of control, and conscientiousness. Further, we find that parental investments only have limited compensatory effects on these gaps. This suggests a need for redesigning the structure of affirmative action policies in India as well as targeting interventions with an aim to improving soft skills among the disadvantaged.

Grewenig, E., Lergetporer, P., Werner, K., Woessmann, L., & Zierow, L. (2020). **COVID-19 and Educational Inequality: How School Closures Affect Low- and High-Achieving Students**. In *CESifo Working Paper Series* (No 8648). Consulté à l'adresse CESifo website: https://ideas.repec.org/p/ces/ceswps/_8648.html
In spring 2020, governments around the globe shut down schools to mitigate the spread of the novel coronavirus. We argue that low-achieving students may be particularly affected by the lack of educator support during school closures. We collect detailed time-use information on students before and during the school closures in a survey of 1,099 parents in Germany. We find that while students on average reduced their daily learning time of 7.4 hours by about half, the reduction was significantly larger for low-achievers (4.1 hours) than for high-achievers (3.7 hours). Low-achievers disproportionately replaced learning time with detrimental activities such as TV or computer games rather than with activities more conducive to child development. The learning gap was not compensated by parents or schools who provided less support for low-achieving students. The reduction in learning time was not larger for children from

lower-educated parents, but it was larger for boys than for girls. For policy, our findings suggest binding distance-teaching concepts particularly targeted at low-achievers.

Hillerich-Sigg, A. (2020). **Transitions from lower track secondary schools into vocational training: Does a detour pay off?** In *ZEW Discussion Papers* (N° 20-049). Consulté à l'adresse ZEW - Leibniz Centre for European Economic Research website: https://ideas.repec.org/p/zbw/zewdip/20049.html
This paper analyzes the effect of alternative transition paths after grade 9 of German lower secondary school on vocational training. Using a selection-on-observables approach I show that a delayed transition into vocational training after lower track secondary school is not a disadvantage conditional on a successful transition into vocational training. Students benefit from continuing general schooling or attending vocational school compared to transitioning directly with regard to wages paid during vocational training as well as average wages, prestige, and socioeconomic status of the training occupation. This comes at the cost of a lower probability to match the training occupation with the reported desired occupation and being less satisfied with the vocational training. Participation in pre-vocational training does not lead to a different type of vocational training position than after a direct transition. However, those participants are less satisfied with their vocational training.

Isphording, I. E., Lipfert, M., & Pestel, N. (2020). ***School Re-Openings after Summer Breaks in Germany Did Not Increase SARS-CoV-2 Cases***. Consulté à l'adresse Institute of Labor Economics (IZA) website: https://EconPapers.repec.org/RePEc:iza:izadps:dp13790
This paper studies the effect of the end of school summer breaks on SARS-CoV-2 cases in Germany. We exploit variation in the staggered timing of summer breaks across federal states which allows us to implement an event study design. We base our analysis on official daily counts of confirmed coronavirus infections by age groups across all 401 German counties. We consider an event window of two weeks before and three weeks after the end of summer breaks. Over a large number of specifications, sub-group analyses and robustness checks, we do not find any evidence of a positive effect of school re-openings on case numbers. On the contrary, our preferred specification indicates that the end of summer breaks had a negative effect on the number of new confirmed cases. Three weeks after the end of summer breaks, cases have decreased by 0.55 cases per 100,000 inhabitants or 27 percent of a standard deviation. Our results are not explained by changes in mobility patterns around school re-openings arising from travel returnees. We conclude that school re-openings in Germany under strict hygiene measures combined with quarantine and containment measures have not increased the number of newly confirmed SARS-CoV-2 infections.

Keane, M., Krutikova, S., & Neal, T. (2020). **The Impact of Child Work on Cognitive Development: Results from Four Low to Middle Income Countries**. In *Discussion Papers* (N° 2020-14). Consulté à l'adresse School of Economics, The University of New South Wales website: https://ideas.repec.org/p/swe/wpaper/2020-14.html
We study the impact of child work on cognitive development in four Low- and Middle-Income Countries. We advance the literature by using cognitive test scores collected regardless of school attendance. We also address a key gap in the literature by controlling for children's complete time allocation budget. This allows us to estimate effects of different types of work, like chores and market/farm work, relative to specific alternative time-uses, like school or study or play/leisure. Our results show child work is

more detrimental to child development to the extent that it crowds out school/study time rather than leisure. We also show the adverse effect of time spent on domestic chores is similar to time spent on market and farm work, provided they both crowd out school/study time. Thus, policies to enhance child development should target a shift from all forms of work toward educational activities.

Koedel, C., & Parsons, E. (2020). **The Effect of the Community Eligibility Provision on the Ability of Free and Reduced-Price Meal Data to Identify Disadvantaged Students**. In *Working Papers* (N° 2005). Consulté à l'adresse Department of Economics, University of Missouri website: https://ideas.repec.org/p/umc/wpaper/2005.html
The Community Eligibility Provision (CEP) is a policy change to the federally-administered National School Lunch Program that allows schools serving low-income populations to classify all students as eligible for free meals, regardless of individual circumstances. This has implications for the use of free and reduced-price meal (FRM) data to proxy for student disadvantage in education research and policy applications, which is a common practice. We document empirically how the CEP has affected the value of FRM eligibility as a proxy for student disadvantage. At the individual student level, we show that there is essentially no effect of the CEP. However, the CEP does meaningfully change the information conveyed by the share of FRM-eligible students in a school. It is this latter measure that is most relevant for policy uses of FRM data.

Kozhaya, M., & Martinez Flores, F. (2020). **Schooling and child labor: Evidence from Mexico's full-time school program**. In *Ruhr Economic Papers* (N° 851). Consulté à l'adresse RWI - Leibniz-Institut für Wirtschaftsforschung, Ruhr-University Bochum, TU Dortmund University, University of Duisburg-Essen website: https://ideas.repec.org/p/zbw/rwirep/851.html
Child labor is a matter of international concern. This paper examines the effect of a program that extended the length of a school day from four to six or eight hours in Mexico, on school enrollment, time spent on schooling activities, and child labor of children aged 7 to 14. To identify the effect, we take advantage of the staggered implementation of the FTS program across municipalities. The results show that extending the school day has no effect on the probability of being enrolled in school, but a positive effect on the weekly hours allocated to schooling activities. When focusing on child labor, we find a reduction of 1.6 hours worked, mainly driven by a decrease in the probability of engaging in work by 6.3 percentage points. For boys, we observe a decrease in the probability of engaging in market work and for girls a decrease in the probability of engaging in domestic work.

Le Bars, S. (2020, novembre 3). **Le Covid-19 plonge les universités américaines en pleine « crise existentielle »**. *Le Monde.fr*. Consulté à l'adresse https://www.lemonde.fr/campus/article/2020/11/03/le-covid-19-plonge-les-universites-americaines-en-pleine-crise-existentielle_6058288_4401467.html
Baisse des inscriptions, perte d'attractivité à l'international, chute brutale de leurs ressources, licenciements… avec la pandémie, même les plus prestigieux établissements, piliers du « soft power » américain, sont en difficulté.

McNally, S. (2020). **Gender Differences in Tertiary Education: What Explains STEM Participation?** In *IZA Policy Papers* (N° 165). Consulté à l'adresse Institute of Labor Economics (IZA) website: https://ideas.repec.org/p/iza/izapps/pp165.html

The share of women achieving tertiary education has increased rapidly over time and now exceeds that of men in most OECD countries. However, women are severely under-represented in maths- intensive science fields, which are generally referred to as STEM (science, technology, engineering, and maths). The under-representation of women in these subject areas has received a great deal of attention. This is because these fields are seen to be especially important for productivity and economic growth and are associated with occupations that have higher earnings. Subject of degree is an important part of the explanation for the gender wage gap. The aim of this paper is to review evidence on explanations for the STEM gap in tertiary education. This starts with statistics about background context and evidence on how well-prepared male and female students may be for studying STEM at a later stage. I then discuss what the literature has to say about the role of personal attributes: namely confidence, self-efficacy and competitiveness and the role of preferences and expectations. I go on to discuss features of the educational context thought to be important for influencing attributes and preferences (or mediating their effects): peers; teachers; role models; and curriculum. I then briefly discuss broader cultural influences. I use the literature reviewed to discuss policy implications.

Müller, D. (2020). **Lost opportunities: Market work during high school, establishment closures and the impact on career prospects**. In *Working Paper Series* (N° 2020:17). Consulté à l'adresse IFAU - Institute for Evaluation of Labour Market and Education Policy website: https://ideas.repec.org/p/hhs/ifauwp/2020_017.html
In this paper, I study the importance of market work during high school for graduates' school-towork transition and career prospects. Relying on Swedish linked employer-employee data over a 30-year period, I show that market work during school provides students with an important job search channel, accounting for 30 percent of direct transitions into regular employment. I use the fact that some graduates are deprived of this channel due to establishment closures just prior to graduation and labor market entry. I compare classmates from vocational tracks with the same field of specialization to identify the effects of the closures and show that lost job-finding opportunities due to an establishment closure lead to an immediate and sizable negative effect on employment after graduation. The lost employer connection have also persistent, but diminishing negative effects on employment and earnings for up to 10 years, but are not permanent. Parts of the effect appear to be driven by a process where graduates who are subject to a closure of a relevant employer before graduation have to find employment in an industry which is less relevant to their education.

Rakshit, S., & Sahoo, S. (2020). **Biased Teachers and Gender Gap in Learning Outcomes: Evidence from India**. In *GLO Discussion Paper Series* (N° 684). Consulté à l'adresse Global Labor Organization (GLO) website: https://ideas.repec.org/p/zbw/glodps/684.html
This paper investigates the effect of stereotypical beliefs of teachers on learning outcomes of secondary school students in India. We measure teacher's bias through an index capturing teacher's subjective beliefs about the role of gender and other characteristics in academic performance. We tackle the potential endogeneity of teacher's subjective beliefs by controlling for teacher fixed effects in a value-added model that includes lagged test score of students. We find that a standard deviation increase in biased attitude of the math teacher widens the female disadvantage in math performance by 0.07 standard deviation over an academic year. This negative effect of biased teachers is significant only for male teachers. The effect is especially strong

among the medium-performing students and in classes where the majority of students are boys. Moreover, among the medium-performing students, having a female teacher significantly reduces the gender gap in math performance. As a plausible mechanism, we show that biased teachers negatively affect girls' attitude towards math as compared to boys. Unlike math outcome, we do not find any significant effect when we analyze the effect of biased English teachers on English scores of the same students.

Seidlitz, A., & Zierow, L. (2020). **The Impact of All-Day Schools on Student Achievement - Evidence from Extending School Days in German Primary Schools**. In *CESifo Working Paper Series* (N° 8618). Consulté à l'adresse CESifo website: https://ideas.repec.org/p/ces/ceswps/_8618.html
This paper studies the effect of longer school days — induced by voluntary all-day programs in German primary schools — on school performance. We combine data from the National Educational Panel Study covering 5771 primary school students with municipality-level information on all-day school investments. Facing the challenge of selection into all-day school programs, we instrument all-day school expansion with construction subsidies from a large federal investment project. Results imply that all-day programs lead to improvements in language and math skills as measured by teacher assessments and to a higher probability of being recommended for the academic track after primary school. The heterogeneity analysis reveals that boys benefit more than girls from all-day programs in terms of the assessment by their math teacher. Furthermore, there is a significant negative effect on non-native speakers' math and German test scores.

Thomsen, S. L., & Trunzer, J. (2020). **Did the Bologna Process Challenge the German Apprenticeship System? Evidence from a Natural Experiment**. In *GLO Discussion Paper Series* (N° 690). Consulté à l'adresse Global Labor Organization (GLO) website: https://ideas.repec.org/p/zbw/glodps/690.html
Starting in 1999, the Bologna Process reformed the German five-year study system for a first degree into the three-year bachelor's (BA) system to harmonize study lengths in Europe and improve competitiveness. This reform unintentionally challenged the German apprenticeship system that offers three-year professional training for the majority of school leavers. Approximately 29% of new apprentices are university-eligible graduates from academic-track schools. We evaluate the effects of the Bologna reform on new highly educated apprentices using a generalized difference-in-differences design based on detailed administrative student and labor market data. Our estimates show that the average regional expansion in first-year BA students decreased the number of new highly educated apprentices by 3%-5%; average treatment effects on those indecisive at school graduation range between -18% and -29%. We reveal substantial gender and occupational heterogeneity: males in STEM apprenticeships experienced the strongest negative effects. The reform aggravated the skills shortage in the economy.

Aspects psychologiques de l'éducation

Bossard, L.-M. (Éd.). (2020). ***Histoire de la clinique d'orientation psychanalytique en éducation et formation - Parcours de témoins***. Consulté à l'adresse https://www.editions-harmattan.fr/index_harmattan.asp?navig=catalogue&obj=livre&isbn=9782343208312&

utm_source=phplist&utm_campaign=message_30220&utm_medium=email&utm_content=lienTitre
Depuis Freud, persuadés que la psychanalyse pouvait présenter un intérêt certain pour la pédagogie, de nombreux psychanalystes ont mis en œuvre et théorisé des pratiques éducatives prenant en compte les dimensions inconscientes du sujet. À leur suite, des enseignants et chercheurs universitaires ont fait évoluer la relation entre psychanalyse et éducation, en passant d'une pratique appliquée, selon le souhait de Freud, à une démarche de production de savoirs référée à la psychanalyse.

Deltand, M., & Kaddouri, M. (2020). **Rapport conflictuel entre projet de soi pour soi et projet de soi pour autrui : analyse par les théories de la traduction et de la double transaction**. *Recherches en éducation*, (42). https://doi.org/10.4000/ree.1536
La contribution mobilise la théorie de la traduction et celle de la double transaction qu'elle combine pour analyser le positionnement d'acteurs considérés dans leur dynamique individuelle et sociale. Deux entretiens, issus de deux enquêtes menées dans des contextes différents (Congo, France), servent de base pour cette analyse. Le premier entretien illustre la réussite de la traduction et les transactions biographiques et relationnelles, alors que le second illustre le non-aboutissement des transactions en raison d'une traduction divergente. La question à laquelle tente de répondre l'article concerne le rôle de la traduction dans la réussite de la double transaction.

Gee, P. A., Schneider, K. A., Devine, B., & Petursdottir, A. I. (2020). **Effects of Error-Contingent Prompts Depend on Temporal Arrangement of Stimuli in Symbolic Matching to Sample**. *Journal of Behavioral Education*, *29*(4), 657-674. https://doi.org/10.1007/s10864-019-09338-5
In laboratory symbolic matching-to-sample (MTS) tasks, acquisition commonly proceeds via trial and error, whereas in applied settings, MTS instruction typically includes prompting and prompt-fading strategies. We examined the effects of error-contingent prompts in symbolic MTS under sample-first and comparison-first presentation arrangements. Three children (4–6 years) participated in each of two experiments. Each participant received two instructional sessions in each of four conditions, with new stimuli in each session. Dependent measures included terminal accuracy, items mastered, and overall efficiency across participants. In Experiment 1, error-contingent prompts facilitated acquisition under the comparison-first but not under the sample-first arrangement. In Experiment 2, the temporal arrangement of error correction trials was altered such that prompts did not delay the presentation of comparison stimuli. With this change, error-contingent prompts facilitated acquisition under both stimulus presentation arrangements. The results suggest that in a sample-first presentation format, prompts may be ineffective if they delay comparison presentation.

ZWICK, H. S., & SYED ZWICK, H. (2019). **Le modèle de motivation - opportunité - capacité : application à la mobilité étudiante régionale en Asie centrale**. *Journal of international mobility. Moving for education training and research*, (7), 45-68. Consulté à l'adresse https://www.cairn.info/revue-journal-of-international-mobility-2019-1-page-45.htm
Cette étude distingue analytiquement les facteurs motivationnels, opportunistes et de capacité (MOA) afin d'étudier le processus de décision de la mobilité étudiante internationale dans sa configuration moderne. Pour cela, elle utilise des données primaires issues d'un questionnaire en ligne soumis à d'anciens étudiants d'Asie centrale de cinq pays (Afghanistan, Kazakhstan, Tadjikistan, Turkménistan et Ouzbékistan).

L'objectif de cette étude est de tester la présence d'une variation significative par nationalité du rôle de chaque facteur dans la prise de décision d'étudier à l'étranger.

Aspects sociaux de l'éducation

Bell, A. N., & Juvonen, J. (2020). **Gender Discrimination, Perceived School Unfairness, Depressive Symptoms, and Sleep Duration Among Middle School Girls**. *Child Development*, *91*(6), 1865-1876. https://doi.org/10.1111/cdev.13388
The current study examines how gender discrimination by adults in school is linked with depressive symptoms and sleep duration over time in middle school. The main goal is to test one psychological mechanism that can account for such associations: perceived school unfairness. Relying on a racially-ethnically diverse sample of girls (N = 2,718, Mage = 13.01, SDage = 0.39) from 26 middle schools, multilevel mediation analyses revealed that girls who experienced school-based gender discrimination by an adult in seventh grade reported higher levels of perceived school unfairness in eighth grade. Moreover, perceived unfairness, in turn, was associated with more depressive symptoms and shorter sleep durations by eighth grade. Implications of changes in adolescent girls' sleep and mood related to their experiences of gender discrimination are discussed.

Djibo, F., & Gauthier, C. (2020). **Les obstacles à l'exercice de la profession chez les femmes enseignantes du primaire au Burkina Faso**. *Formation et profession*, *28*(2), 19. https://doi.org/10.18162/fp.2020.532

Fang, J., & Fine, G. A. (2020). **Names and Selves: Transnational Identities and Self-Presentation among Elite Chinese International Students**. *Qualitative Sociology*, *43*(4), 427-448. https://doi.org/10.1007/s11133-020-09468-7
What accounts for name choices in a transnational context? What does the choice of ethnic or English names reveal about global identities and the desire to fit into a new culture? Drawing on the sociology of culture and migration, we examine the intersection of naming, assimilation, and self-presentation in light of international student mobility. Based on 25 semi-structured interviews with mainland Chinese students enrolled in an elite Midwestern university, we find that these students make name choices by engaging in both transnational processes and situated practices. First, Chinese international students negotiate between multiple names to deal with ethnic distinctions. While ethnic names can signal distance from other ethnic communities, they also distinguish individuals from others. For these students, names are multi-layered and temporal: their name choices evolve throughout school lives, shaped by power relations in American cultural contexts and channeled by images of their home country. Second, multiple names allow these students to practice situated performance, incorporating the reflective self, the distinctive self, and the imagined self. We address "cross-cultural naming" that accounts for identity in transnational social spaces.

Johnson, D. R., Scheitle, C. P., Juvera, A., Miller, R., & Rivera, V. (2020). **A Social Exchange Perspective on Outside of Class Interactions between Underrepresented Students and Faculty**. *Innovative Higher Education*, *45*(6), 489-507. https://doi.org/10.1007/s10755-020-09518-6

Existing explanations of faculty-student interactions emphasize social-organizational characteristics of higher education to the exclusion of social-psychological dimensions of the interactions themselves. Yet, student perceptions are essential cognitive elements that influence frequency of, and growth from, informal interaction with faculty. Drawing on a survey of students at a large public university, this paper expands theoretical understanding of faculty-student interactions by considering how social exchange theory helps explain frequency of, and growth from, informal interactions—and how such patterns vary by social identity.

Kogachi, K., & Graham, S. (2020). **Numerical Minority Status in Middle School and Racial/Ethnic Segregation in Academic Classes**. *Child Development*, *91*(6), 2083-2102. https://doi.org/10.1111/cdev.13408
This study examined the effects of racial/ethnic segregation (i.e., overrepresentation) in academic classes on belonging, fairness, intergroup attitudes, and achievement across middle school (n = 4,361; MageT1 = 11.33 years), and whether effects depended on numerical minority status in school and race/ethnicity. Latent growth curve models revealed that experiencing more segregation than usual predicted less belonging and fairness than usual for all youth in the numerical minority, and greater in-group preference for numerical minority Whites. Academic classroom segregation throughout middle school predicted less steep declines in in-group preference for adolescents in the numerical minority, and declines in achievement for African American numerical minority youth. Results highlight the need to treat the racial/ethnic context as a structural and dynamic construct.

Lee, J., & Sun, F. (2020). **Intergenerational Economic Mobility Between Mothers and Children: Racial and Ethnic Disparities**. *Family Relations*, *69*(5), 921-933. https://doi.org/10.1111/fare.12424
Objectives This study focuses on the impact of race and ethnicity on intergenerational mobility between mothers and children. Background Most studies have examined intergenerational mobility between fathers and their children. Racial and ethnic disparities might explain the high rates of intergenerational inequality in mobility. Methods The current study used data from the National Longitudinal Survey of Youth 1979 and the National Longitudinal Survey of Youth 1979 for Children and Young Adults. The two data sets were merged based on mother and child's identification number. The final sample consisted of 1,245 non-Black/non-Hispanic, 740 Black, and 538 Hispanic dyads. Multiple linear regression and logistic regression analyses were conducted. Results There are ethnic and racial disparities in net worth and poverty among mothers. Black and Hispanic mothers were less likely to accumulate net worth compared with non-Black/non-Hispanic mothers, and they were also at greater risk of being in poverty compared with non-Black/non-Hispanic mothers. For intergenerational economic mobility, net worth and not living in poverty across mothers were associated with higher income among young adult children. Black race moderated the relationship between maternal net worth and young adult children's income. Conclusion A new perspective is necessary to explore intergenerational economic mobility, considering relations between mothers and children rather than fathers and children. Implications Eliminating discrimination in the labor market is critical to addressing racial and ethnic disparities in economic resources. Service programs to help Black women with children to save money or increase their job opportunities should be in place to improve their potential for upward economic mobility across generations.

Lei, Z., & Lundberg, S. (2020). **Vulnerable Boys: Short-term and Long-term Gender Differences in the Impacts of Adolescent Disadvantage**. *Journal of Economic Behavior & Organization*, *178*(C), 424-448. Consulté à l'adresse https://ideas.repec.org/a/eee/jeborg/v178y2020icp424-448.html
The growing gender gap in educational attainment between men and women has raised concerns that the skill development of boys may be more sensitive to family disadvantage than that of girls. Using the National Longitudinal Study of Adolescent to Adult Health (Add Health) data we find, as do previous studies, that boys are more likely to experience increased problems in school relative to girls, including suspensions and reduced educational aspirations, when they are in poor quality schools, less-educated neighborhoods, and father-absent households. Following these cohorts into young adulthood, however, we find no evidence that adolescent disadvantage has stronger negative impacts on long-run economic outcomes such as college graduation, employment, or income for men, relative to women. We do find that father absence is more strongly associated with men's marriage and childbearing and weak support for greater male vulnerability to disadvantage in rates of high school graduation. An investigation of adult outcomes for another recent cohort from the National Longitudinal Survey of Youth, 1997 produces a similar pattern of results. We conclude that focusing on gender differences in behavior in school may not lead to valid inferences about the effects of disadvantage on adult skills.

Levrard, S. (2020). ***Les enfants dans l'école : une sociologie des acteurs sociaux et territoriaux*** (Phdthesis, Normandie Université). Consulté à l'adresse https://tel.archives-ouvertes.fr/tel-02997547
La thèse se propose d'étudier l'articulation entre la socialisation des enfants et les espaces de l'école. Dans le champ de la sociologie de l'enfance, la notion d'acteur et en particulier celle d'acteur territorial permet de comprendre le statut donné aux enfants et plus précisément de comprendre comment ils exercent leur agency dans leur manière d'habiter l'école. Une revue de littérature délimite les concepts de territoire et d'espace, ainsi que celui des tiers-lieux auquel nous donnons une définition pour l'école. L'enquête est menée avec une méthodologie visuelle participative dans laquelle les enfants, de 6 à 11 ans, photographient les espaces de l'école, clichés explicités en groupe lors d'entretiens. Les enfants habitent de différentes manières les espaces de l'école. Ceux qui appartiennent officiellement aux adultes, la classe par exemple, sont habités par les enfants selon les règles imposées par l'institution qui les accueille. Les espaces conçus et dédiés aux enfants, la cour de récréation par exemple, sont occupés de manière conventionnelle. L'occupation accordée par les adultes se fait selon les règles et les usages imposés par ces derniers mais sont globalement bien intégrés par les enfants. Enfin, une troisième catégorie d'espaces se distingue. Il s'agit des espaces créés ou détournés par les enfants. Ils sont délimités, défendus et habités par eux et pour eux. Ainsi, moins l'adulte investit l'espace, plus les enfants en prennent possession pour loger leurs jeux, leur culture enfantine, se socialiser selon leurs propres règles. Alors, dans l'école, l'espace conçu, c'est-à-dire l'espace physique dédié ou imposé aux enfants, se confronte à l'espace vécu, celui créé par les enfants, celui qu'ils imaginent, qu'ils s'approprient, en d'autres termes, leur territoire.

Prieur, A., Jensen, S. Q., & Nielsen, V. B. (2020). **Lacking social skills: A social investment state's concern for marginalized citizens' ways of being**. *Critical Social Policy*, *40*(4), 608-626. https://doi.org/10.1177/0261018319878130
The Danish state is preoccupied with its citizens' social skills, which are seen as important for the nations' competitiveness. Such skills regard self-presentation, communication, emotional control etc. This article relies primarily on interviews with Danish social workers who are involved either in assessing young marginalized welfare clients' personal readiness for schooling or employment or in preparing them for this through social skills training. Secondarily, it relies on fieldwork data from young Danes at the margins of the educational system and/or the labour market, who are frequently confronted with a devaluation of their personal ways of being. As personal resources related to ways of being, communicating, handling emotions etc. are ascribed social value, especially at the labour market they may work as a form of capital, while the lack of them may be a source of marginalization. These findings are discussed as signs of more general social normative demands, theoretically grasped in the meeting point of Bourdieu's understanding of embodied cultural capital, of Skeggs' analysis of how subjects are attributed value or not, and of Illouz's investigation of the emotional demands contemporary capitalism puts on employees. Understanding the experiences of those who fail to comply with implicit social requirements for personal resources thus shed light on contemporary requirements regarding how to behave and communicate with other people as well as on the state's investments in the most personal spheres of its citizens.

Rangel, D. E., Shoji, M. N., & Gamoran, A. (2020). **The Development and Sustainability of School-Based Parent Networks in Low-Income Latinx Communities: A Mixed-Methods Investigation**. *American Educational Research Journal*, *57*(6), 2450-2484. https://doi.org/10.3102/0002831220916461
Research suggests that school-based parent networks have significant benefits for children's education, yet scholars know very little about how such relationships form and develop over time. This study uses interview and survey data with elementary school parents in predominantly low-income Latinx communities to examine how parents meet one another; how deeper, more trusting relationships develop; and how the size and quality of parent networks change over time in the presence and absence of a family engagement program. Interview data suggest few and infrequent opportunities for parents to meet one another, which makes building relationships characterized by trust and shared expectations more difficult. The quantitative results show positive short-term effects of the program but differential effects over time.

Rybińska, A. (2020). **A Research Note on the Convergence of Childlessness Rates Between Women with Secondary and Tertiary Education in the United States**. *European Journal of Population*, *36*(5), 827-839. https://doi.org/10.1007/s10680-019-09550-z
A gap in childlessness rates between women with and without tertiary education in low-fertility settings has been well documented by scholars. However, in the United States, high rates of childlessness are declining for women with tertiary education. Will this current trend lead to a closing of the gap in childlessness across educational subgroups in this country? We answer this question using data from the Current Population Survey from 1976 through 2018. We present population-level trends in permanent childlessness by level of education and estimate the differences in the prevalence of childlessness across educational subgroups. Our findings indicate that the rates of childlessness for women aged 40–44 with tertiary education in the United States are the lowest they have been in

over three decades and that rates of childlessness are converging among women with secondary and tertiary education. The declines in childlessness rates and the convergence in childlessness rates between women with secondary and tertiary education are observed for all of the three largest race/ethnicity sub-populations of American women: non-Hispanic white, non-Hispanic black, and Hispanic women. This report contributes to the emerging literature on the convergence of childlessness rates across sub-populations of women with different levels of educational attainment, which questions the well-established observation that there is a positive relationship between education and childlessness.

Tierno-García, J.-M., Camarero-Figuerola, M., Iranzo-García, P., & Barrios-Arós, C. (2020). **Semi-professional school leadership in Spain: Gender differences**. *European Journal of Education*, *55*(4), 587-601. https://doi.org/10.1111/ejed.12416
Constructing the identity of school principals is difficult because being a principal requires carrying out complex functions in challenging contexts. Our research addressed semi-professional school leadership in Catalonia, Spain, with a particular focus on differences in the managerial styles of men and women. In Spain, the school management system is semi-professional which means that principals are teachers who take on leadership roles for limited periods. In a descriptive study based on an ad hoc questionnaire administered to a representative sample, we considered the personal and contextual characteristics of elementary school principals. Focusing on the variable of gender, this article analyses principals' reasons for accepting and continuing in their position and principals' priorities when performing their duties; also, their perceptions of various aspects of the school environment that help them in their role. We found significant differences related to gender. While the predominance of male principals in elementary education is declining, female principals, more than their male counterparts, must accept and tackle the challenges associated with contextualized, distributed and pedagogical leadership in conditions leading to overexertion. Many of the principals who were women worked in small, rural or disadvantaged schools. Paradoxically, female principals construct their professional identity in closer alignment with administrative style and with teaching duties than with leadership style. We conclude that these challenges should be taken into account and further investigated to avert the precarious position of women in school leadership.

UNESCO : Organisation des Nations unies pour l'éducation, la science et la culture, & EQUALS Skills coalition. (2020). ***Je rougirais si je pouvais : réduire la fracture numérique entre les genres par l'éducation***. Consulté à l'adresse https://unesdoc.unesco.org/ark:/48223/pf0000367416_fre.page=1
Ce rapport analyse l'écart entre les sexes en matière de compétences en TIC dans le monde. Il porte une attention particulière à l'impact des préjugés sexistes présents dans les applications d'intelligence artificielle les plus répandues comme les assistants vocaux numériques, fournit des exemples d'interventions et émet des recommandations pour aider les femmes et les filles à acquérir de solides compétences numériques par l'éducation. Les auteurs se penchent sur le rôle que peut jouer une éducation sensible au genre pour aider à redéfinir une vision sexospécifique de la technologie et garantir l'égalité entre les femmes et les hommes.

UNICEF : Fonds des Nations unies pour l'enfance, Partenariat Equals, UIT : Union internationale des télécommunications, & UNICEF : Fonds des Nations unies pour

l'enfance. (2020). ***Towards an equal future: reimagining girls' education through STEM***. Consulté à l'adresse https://2b37021f-0f4a-4640-8352-0a3c1b7c2aab.filesusr.com/ugd/04bfff_d6ffe9bee8b24d7a814805d0f8c99db8.pdf
Comment la crise de l'apprentissage affecte-t-elle les filles ? Pourquoi l'apprentissage des STEM est-il si important pour les filles ? Quelles sont les disparités entre les genres dans ce domaine ? Pourquoi les filles sont-elles sous-représentées dans les STEM ? Comment pouvons-nous transformer les opportunités pour les filles grâce à une éducation sensible au genre ? À l'occasion du 25e anniversaire de la Déclaration de Beijing, ce rapport attire l'attention sur le potentiel de l'éducation aux STEM pour transformer les normes de genre et améliorer les possibilités d'apprentissage de qualité. Toutes les parties prenantes sont appelées à travailler ensemble pour lutter contre les obstacles auxquels les filles sont confrontées.

Climat de l'école

St-Amand, J., Bowen, F., Bulut, O., Cormier, D., Janosz, M., & Girard, S. (2020). **Le sentiment d'appartenance à l'école : validation d'un modèle théorique prédisant l'engagement et le rendement scolaire en mathématiques d'élèves du secondaire**. *Formation et profession*, *28*(2), 89. https://doi.org/10.18162/fp.2020.530

Évaluation des dispositifs d'éducation-formation

Crouslé, D., Guelzim, M., & Kabla-Langlois, I. (2020). **L'accès aux grandes écoles scientifiques : une égalité des chances ?** *Note d'information du SIES*, (20.15). Consulté à l'adresse https://www.education.gouv.fr/media/72223/download
Le dispositif « devoirs faits » part du constat qu'une part importante des inégalités scolaires se joue en dehors de la salle de classe. Ce rapport de l'inspection générale, qui complète une première note datée de février 2020, est centré sur l'évaluation du déploiement de la mesure depuis sa mise en place à l'automne 2017.

Obert, D., Raynal, J.-F., Cherifi, H., & Biaggi, C. (2020). ***Mise en œuvre des réformes en cours. Devoirs faits. Note d'étape. Août 2020*** (N° 2020-118). Consulté à l'adresse IGÉSR (Inspection générale de l'éducation, du sport et de la recherche) website: https://www.education.gouv.fr/media/72223/download
Le dispositif « devoirs faits » part du constat qu'une part importante des inégalités scolaires se joue en dehors de la salle de classe. Ce rapport de l'inspection générale, qui complète une première note datée de février 2020, est centré sur l'évaluation du déploiement de la mesure depuis sa mise en place à l'automne 2017.

Formation continue

Lafont, P., & Cavaco, C. (Éd.). (2020). ***Les défis de l'évaluation dans les pratiques de reconnaissance et de validation des acquis de l'expérience (RVAE)***. Consulté à l'adresse https://www.editions-harmattan.fr/index_harmattan.asp?navig=catalogue&obj=livre&isbn=9782343208282&

utm_source=phplist&utm_campaign=message_30220&utm_medium=email&utm_content=lienTitre
Le processus de reconnaissance et de validation des acquis de l´expérience a fait émerger des pratiques nouvelles d´évaluation, étayées par des méthodologies et des outils innovants. Ce numéro de Chemins de formation a pour finalité d'appréhender l'origine de ces défis et leur traduction dans la détermination des actions produites et induites par les acteurs concernés, à partir de recherches scientifiques développées dans le champ des sciences de l´éducation dans divers pays d´Europe (France, Portugal, Suisse, Belgique, Irlande).

Niang, A. Y. (2020). **L'émergence d'un nouveau modèle de formation continue dans l'école sénégalaise : conditions d'apparition et conditions de réussite**. *Formation et profession*, *28*(2), 75. https://doi.org/10.18162/fp.2020.544

Métiers de l'éducation

Alarcón, R., Jiménez, E. del P., & Vicente-Yagüe, M. I. de. (2020). **Development and validation of the DIGIGLO, a tool for assessing the digital competence of educators**. *British Journal of Educational Technology*, *51*(6), 2407-2421. https://doi.org/10.1111/bjet.12919
Educators must be able to adapt to the opportunities provided by information and communication technologies, making use of those which are best suited to meeting their students' needs and identifying areas of practice in which they themselves need to develop their skills. The European Framework for the Digital Competence of Educators (DigCompEdu) proposes 22 basic competences, organised into six areas, which educators should ideally acquire. The present study seeks to build on this Framework by developing and validating an assessment tool that considers a total of eight areas: the six areas covered by DigCompEdu and two new areas corresponding to extrinsic factors in the digital competence of educators. The latter refers specifically to the digital resources and support services that are available to educators in their working environment. A total of 509 teacher educators from across Spain and Latin America completed the 29-item DIGIGLO questionnaire. Analysis of the Spanish language instrument's construct validity and psychometric properties showed it to be a valid and reliable tool for assessing the digital competence of educators across the eight areas considered.

BETTAHAR, Y., & ALLE, L. (2019). **La mobilité internationale des personnels : enjeux et perspectives à travers l'exemple de l'Université de Lorraine**. *Journal of international mobility. Moving for education training and research*, (7), 69-86. Consulté à l'adresse https://www.cairn.info/revue-journal-of-international-mobility-2019-1-page-69.htm?contenu=article
Alors que la mobilité internationale des étudiants est largement discutée dans les différentes sphères de la vie publique et donne lieu à nombre de travaux universitaires en France, force est de constater que la mobilité des personnels est rarement étudiée. Cet article propose d'en examiner quelques aspects dans le cadre d'Erasmus + et du partenariat stratégique Erasmus + REALISE coordonné depuis 2017 par l'Université Paul-Valéry Montpellier 3. Après avoir été pensée comme un levier de la mobilité étudiante et de la coopération internationale, la mobilité internationale des personnels s'est fait une place à part entière, avec ses propres impacts sur les bénéficiaires et les institutions.

Blanchard, C. (2020, novembre 2). **Les enseignants ne sont pas des héros**. Consulté 3 novembre 2020, à l'adresse Alternatives Economiques website: https://www.alternatives-economiques.fr/cecile-blanchard/enseignants-ne-heros/00094363
Y aura-t-il un bout du tunnel ? Un fond de la piscine où donner un grand coup de pied pour remonter ?

Bouchetal, T. (2020). **Les évolutions de la voie professionnelle en France : quelles conséquences sur les dynamiques enseignantes à l'échelle d'un établissement ?** *Recherches en éducation*, (42). https://doi.org/10.4000/ree.1543
Dans un contexte d'évolution de la voie professionnelle, cet article cherche à mieux comprendre comment, à l'échelle d'un établissement du secondaire, un processus d'interprétation des réformes s'opère, révélant des dynamiques professionnelles enseignantes variées. Dans le cadre d'une enquête ethnographique au sein d'un lycée professionnel, l'analyse des données recueillies auprès des professeurs de plus de cinquante ans (proportion importante de l'effectif enseignant) permet d'établir que la réception et la mise en œuvre des prescriptions s'élaborent au sein de collectifs fortement configurés par les filières et les disciplines, dans lesquels l'engagement est pondéré par la nature des parcours et des motifs menant à l'enseignement professionnel.

Chello, F. (2020). **Faire face aux tensions liées à la reconfiguration du système universitaire italien : la voix des professeurs(es)**. *Recherches en éducation*, (42). https://doi.org/10.4000/ree.1419
La reconfiguration du système universitaire est un phénomène international d'actualité. Il est caractérisé par de nombreux changements liés aux pratiques quotidiennes de tous les acteurs qui vivent dans ce contexte (professeurs, étudiants, personnel technique-administratif, etc.). Parmi ces changements, l'article se concentre sur les transformations de l'agir professionnel des professeurs universitaires – avec une attention particulière aux activités de recherche, d'enseignement et de gouvernance – à travers l'analyse des résultats d'une recherche menée à l'université Suor Orsola Benincasa de Naples. Réalisée à partir d'une posture épistémologique et méthodologique de type compréhensive, la recherche s'est articulée en deux phases successives. Une première phase exploratoire a permis de préciser les questions de recherche, de choisir le terrain d'investigation, d'élaborer des hypothèses ancrées et de construire les outils méthodologiques pour l'enquête empirique. La deuxième phase, faisant usage de l'entretien semi-structuré, a visé à faire émerger et à déconstruire les représentations dominantes de l'agir professionnel. Les résultats montrent que, pour faire face aux tensions liées à la reconfiguration du système universitaire italien, les professeurs d'UNISOB oscillent entre différentes grammaires actionnelles.

Corbière, M., & Larivière, N. (2020). ***Méthodes qualitatives, quantitatives et mixtes: dans la recherche en sciences humaines, sociales et de la santé***. Consulté à l'adresse https://www.puq.ca/catalogue/livres/methodes-qualitatives-quantitatives-mixtes-edition-3773.html
« Le présent ouvrage, en évitant le traditionnel clivage entre méthodes qualitatives et quantitatives, présente 30 devis ou analyses de recherche, dont l'étude de cas, la théorisation ancrée, la revue de littérature systématique, l'essai randomisé, le groupe de discussion focalisée, les analyses multiniveaux, la modélisation par équations structurelles

et les approches participatives. Cette nouvelle édition est également enrichie de chapitres portant sur l'examen de la portée, la méta-review des écrits, l'analyse de puissance, l'analyse d'agrégats géographiques, les algorithmes d'apprentissage automatique ou statistique, la modélisation de type Rasch et les enquêtes en ligne. Tout au long du manuel, des ponts sont établis entre les méthodes de recherche qualitatives, quantitatives et mixtes afin de mettre en lumière leurs points communs et leurs articulations. Leurs applications concrètes permettront également au lecteur (étudiant, chercheur, professeur ou intervenant) de reproduire le cheminement méthodologique tracé par les auteurs. »--

Deltand, M. (2020). **Modes de résolution des tensions identitaires en formation : le cas des reconversions vers le métier d'enseignant**. *Recherches en éducation*, (42). https://doi.org/10.4000/ree.1455
À partir d'entretiens biographiques auprès de professionnels engagés dans des dispositifs de formation les préparant à une reconversion vers le métier d'enseignant, l'article analyse les stratégies identitaires et les moments de délibérations de soi avec soi qu'ils mettent en place pour faire face aux tensions d'identité que les apprentissages du nouveau métier génèrent en eux. L'accent est plus particulièrement mis sur les fonctions identitaires de ces stratégies comme l'une des composantes des quatre modes de résolution des tensions présentés dans nos résultats : modes de préservation, réagencement, remaniement et transformation identitaires.

Djibo, F., & Gauthier, C. (2020). **Les obstacles à l'exercice de la profession chez les femmes enseignantes du primaire au Burkina Faso**. *Formation et profession*, *28*(2), 19. https://doi.org/10.18162/fp.2020.532

Duchesne, C., Callonnec, L. L., & Gagnon, N. (2020). **Transition et socialisation professionnelles d'une nouvelle professeure d'université : dynamiques collectives et institutionnelles en question**. *Recherches en éducation*, (42). https://doi.org/10.4000/ree.1581
En contexte nord-américain, la plupart des nouveaux professeurs d'université ont eu l'occasion d'entrevoir certains aspects du professorat au cours de leurs études doctorales et de se faire une idée assez juste de ce qui les attend, à la condition qu'ils aient eu la possibilité d'occuper les fonctions d'assistant de recherche ou de chargé d'enseignement. Les doctorants sont habituellement conscients que la charge de travail du professeur peut être lourde ; dès leur entrée dans cette catégorie d'emploi, cette crainte semble se confirmer, parfois au-delà de leurs appréhensions. En s'appuyant sur un entretien de recherche semi-dirigé et l'analyse de celui-ci, cet article fait état du processus transitoire effectué par une nouvelle professeure d'université ainsi que des étapes et des écueils de sa socialisation à sa nouvelle profession. Le besoin d'un soutien institutionnel mieux ciblé et l'importance, pour le professeur novice, d'être accueilli au sein d'une équipe de collègues seront aussi discutés.

Durat, L. (2020). **Former des retraités au tutorat : questionner les incidents critiques pour conceptualiser les compétences transversales liées à l'action**. *Recherches en éducation*, (42). https://doi.org/10.4000/ree.1633
Sollicités pour éclairer la question de la transférabilité de l'expérience de séniors dans un dispositif de tutorat d'étudiants, nous avons fait l'hypothèse qu'une voie d'accès pourrait être de questionner des incidents critiques de ces professionnels expérimentés afin de les

aider à formaliser les processus à l'œuvre dans le développement de leurs compétences transversales. Le retour à une situation vécue décrite dans des récits (filmés), retravaillés collectivement avec leurs pairs, a effectivement permis de mettre au jour la structure perceptive de l'expérience en montrant les éléments cognitifs, conatifs et socio-affectifs qui composent le développement de compétences transversales.

Frias-Navarro, D., Pascual-Llobell, J., Pascual-Soler, M., Perezgonzalez, J., & Berrios-Riquelme, J. (2020). **Replication crisis or an opportunity to improve scientific production?** *European Journal of Education*, *55*(4), 618-631. https://doi.org/10.1111/ejed.12417
Science is undergoing a crisis that has been referred to, since the early 21st century, as a crisis of confidence and a crisis of replication. This article reviews questions pertaining to the replication crisis; questions addressing the quality and credibility of the sciences; specifically, questions linked to what are known as false positives, null results, and questionable research practices (p-hacking, harking, cherry-picking). As an outcome of our review and analysis, a set of recommendations to strengthen the elaboration of reliable and valid research studies is provided. Changes are needed in order to foment meta-research, open science practices and replication studies; notably, changes are needed in the instruction of research methods; in the use and interpretation of statistical data, as well as in research culture in general. We conclude that the replication crisis presents an opportunity to improve research practices and the quality of scientific production in all fields of research, including research in education.

Jarraud, F. (s. d.). **Les enseignants « sous-performants » licenciés plus facilement**. Consulté 13 novembre 2020, à l'adresse Le café pédagogique website: http://www.cafepedagogique.net/lexpresso/Pages/2020/11/13112020Article637408483117288714.aspx?actId=ebwp0YMB8s1_OGEGSsDRkNUcvuQDVN7aFZ1E4yS5hsZMczVe0oRbhmAPNiXrAmaf&actCampaignType=CAMPAIGN_MAIL&actSource=505629
« Ceux qui utilisent le système salarial comme un bouclier contre la réticence ou l'incapacité doivent sortir ». Le ministre de l'enseignement de la Belgique flamande annonce qu'il va modifier la procédure d'évaluation des enseignants pour rendre leur licenciement plus aisé.

Kim, D., Twombly, S. B., Wolf-Wendel, L., & Belin, A. A. (2020). **Understanding Career Mobility of Professors: Does Foreign-Born Status Matter?** *Innovative Higher Education*, *45*(6), 471-488. https://doi.org/10.1007/s10755-020-09513-x
The purpose of this study was to seek to understand the mobility patterns of faculty members, with particular attention to foreign-born faculty members who work at 4-year colleges and universities in the United States. Examining data from the Survey of Doctorate Recipients, we looked at the mobility patterns of faculty members who held tenure-track faculty positions in 2003 and who responded to the survey again in 2013 (a 10-year time period). After examining different types of mobility, we found that the only significant difference was that, all things being equal, foreign-born faculty members were less likely to move into administration than U.S.-born faculty members. Foreign-born faculty members were no different from their U.S.-born counterparts in their mobility to other universities or to business/industry.

Lausanne, E. : E. polytechnique fédérale de, & EPFL : Ecole polytechnique fédérale de Lausanne. (2020). ***À votre Écoute : L'expérience des enseignants vaudois de l'enseignement à distance COVID _19***. Consulté à l'adresse

https://www.epfl.ch/education/educational-initiatives/rapport-sur-les-experiences-de-lenseignement-a-distance/
Ce rapport offre un aperçu du vécu des enseignants vaudois pendant la période de confinement liée à la COVID-19. Les résultats principaux du sondage « A votre écoute » montrent que les participants étaient conscients de la nécessité d'adopter des approches différentes pour l'enseignement à distance, de créer du contenu nouveau et adapté. Ils ont priorisé le maintien du contact social avec leurs élèves et le suivi des élèves, ainsi que la distribution du contenu. Les analyses sur les facteurs associés à un enseignement à distance efficace révèlent qu'il y a trois types de facteurs qui jouent un rôle : les facteurs contextuels les facteurs individuels (autonomie, compétence et motivation de l'enseignant et de l'élève) et les facteurs pédagogiques (pratiques et outils).

Lerman, D. C., Luck, K. M., Smothermon, S., Zey, B. A., Custer, T., & Smith, L. D. (2020). **Training of Paraprofessionals by Their Classroom Teachers: A Descriptive Evaluation of Pyramidal Training Outcomes**. *Journal of Behavioral Education*, *29*(4), 675-698. https://doi.org/10.1007/s10864-019-09341-w
Pyramidal training may offer an efficient approach for disseminating behavior analytic teaching practices into public schools serving students with autism. In this study, we evaluated 16 teachers' use of behavioral skills training (BST) while they trained paraprofessionals to use discrete-trial teaching (DTT). All paraprofessionals demonstrated high levels of procedural integrity following the training, although six of the 16 teachers received experimenter feedback to increase the integrity of the paraprofessional's performance. A descriptive assessment of the training indicated that the majority of teachers used vocal instructions, modeling, and role play while training their paraprofessionals to implement DTT but only half of the teachers collected procedural integrity data to monitor the paraprofessionals' performance. Although all teachers provided feedback to their paraprofessionals during the in situ portion of the training, the teachers were more likely to deliver feedback for errors than for correctly implemented components. These findings suggest that training teachers to implement BST with their paraprofessionals is an effective and socially valid approach to dissemination.

Martel, L. (2020). ***Étude de pratiques de directrices et de directeurs d'école et de certains de leurs fondements***. http://hdl.handle.net/11143/17249
Bien que nombre de recherches se soient penchées sur les pratiques des directrices et des directeurs d'école, aucune ne s'est intéressée aux fondements de celles-ci, à savoir les intentions et les représentations qui sous-tendent ces pratiques, et sur les incidences du contexte particulier de la mise en œuvre d'une gestion axée sur les résultats au Québec. Cette thèse a donc pour objectif général d'étudier les pratiques de directrices et de directeurs d'école primaire à l'égard des enseignantes et des enseignants ayant pour but de favoriser la réussite, et plus spécifiquement, leur mise en œuvre, la distinction des intentions et le dévoilement des représentations qui les sous-tendent. Pour ce faire, l'approche de recherche retenue est qualitative et peut également être qualifiée de descriptive vu son but qui est de décrire un phénomène et sa méthode de collecte de données qui consiste à décrire des données organisées autour de thèmes déterminés. Les participantes et les participants de cette recherche sont des directrices et des directeurs d'école primaire d'un même centre de services scolaire francophone qui compte plus de 10 000 élèves. Les participantes et les participants ont été sélectionnés en fonction de deux critères, à savoir diriger une école primaire où la réussite s'est

améliorée au cours de leur mandat et être volontaire pour participer à la recherche. La méthode d'échantillonnage retenue est intentionnelle et non probabiliste. Au terme de la démarche de recrutement, 18 directrices et directeurs ont accepté de participer à une entrevue semi-dirigée individuelle. L'identification et la description des pratiques et des stratégies mises en œuvre par les directrices et les directeurs d'école a permis de constater que l'analyse de la situation, la formulation des objectifs, la connaissance du milieu et du contexte, la collecte et l'analyse des données pour identifier les besoins, les échanges avec le personnel enseignant sur les objectifs lors de réunions, la prise en compte des résultats pour prendre les décisions relatives aux activités pédagogiques et/ou aux services aux élèves, la demande de soutien pour coordonner l'enseignement, la participation au travail d'équipe, les rencontres individuelles du personnel enseignant au sujet de leurs élèves de même que l'utilisation des résultats pour apprécier le degré d'atteinte des objectifs d'amélioration sont partagées par l'ensemble des participantes et des participants. Dans le même sens, toutes les directrices et tous les directeurs d'école rencontrés en entrevue ont mentionné avoir les intentions suivantes : donner la direction et mobiliser l'équipe-école, favoriser la réussite, accompagner, collaborer et influencer. Enfin, au sujet du dévoilement des représentations des directrices et des directeurs d'école, plusieurs éléments se rapportant aux interprétations, aux émotions, aux croyances, aux valeurs et aux attitudes ont été évoqués en lien avec des valeurs humaines ou professionnelles. Les conclusions qu'il est possible de tirer de cette recherche au regard des résultats obtenus sont à l'effet que celle-ci a permis de valider et d'enrichir le modèle d'Hallinger à différents niveaux. Que ce soit par la description plus fine ou l'identification de pratiques supplémentaires à celles déjà recensées, la distinction d'intentions à caractère pédagogique ou administratif ajoutant aux dimensions proposées ou encore en levant le voile sur des représentations associées à des valeurs de nature humaine ou professionnelle, tous les résultats contribuent à l'avancement des connaissances sur les pratiques des directrices et des directeurs d'école.

Masdonati, J., & Massoudi, K. (2020). **Apprendre à conseiller, devenir conseiller(ère)**. *Recherches en éducation*, (42). https://doi.org/10.4000/ree.1449
La formation au métier de psychologue du conseil et de l'orientation est confrontée à de nouveaux défis, liés à la nécessité d'accompagner des individus aux prises avec de multiples transitions de carrière et des parcours professionnels complexes. En nous appuyant sur les notions de professionnalité émergente (Jorro, 2014) et de formation de l'identité professionnelle (Brown & Bimrose, 2017) et en partant de deux groupes focalisés avec douze étudiants, nous avons analysé les apprentissages initiés par un dispositif de formation pratique au conseil d'orientation. Les résultats font état d'une multitude de processus d'apprentissage (par l'observation, par les rétroactions, par la pratique, mais aussi par l'articulation de celle-ci avec la théorie), permettant le développement de compétences tant techniques qu'intrapersonnelles et interpersonnelles. Ils montrent également que le passage par le dispositif stimule la formation de l'identité professionnelle des étudiants, tant dans son versant social que personnel.

Mignot, E. (2020, novembre 2). **Sujets sensibles : des enseignants seuls face au malaise**. Consulté 3 novembre 2020, à l'adresse Alternatives Economiques website: https://www.alternatives-economiques.fr/sujets-sensibles-enseignants-seuls-face-malaise/00094366

Les enseignants mal à l'aise pour évoquer certains sujets avec leurs élèves manquent de soutien et de ressources pour dépasser leurs craintes.

MISSIR, M.-C. (2020). ***Enseignants en période de confinement : usages, besoins et acquis : rapport d'étude***. Consulté à l'adresse https://www.reseau-canope.fr/fileadmin/user_upload/Projets/agence_des_usages/confinement/Rapport_DT_ARA_DRDUNE_2020.pdf
Le rapport présente les résultats d'une enquête à destination des enseignants visant à mieux comprendre les besoins d'accompagnement en situation de confinement, notamment en ce qui concerne des stratégies pédagogiques à distance et les difficultés et les acquis de la période de confinement. Les résultats abordent d'abord les éléments du contexte : les disparités entre élèves ; les difficultés de la continuité pédagogique rencontrées par les enseignants, l'importance de la communauté enseignante et du présentiel. La deuxième partie apporte des éléments de réponse quant aux besoins des enseignants. La troisième partie met en exergue les éléments de réflexion des enseignants quant à leurs pratiques pédagogiques pendant le confinement et futures.

Montandon, C. (2020). **Enjeux d'une recherche collaborative : les présupposés épistémologiques et méthodologiques requis dans une analyse des processus de traduction**. *Recherches en éducation*, (42). https://doi.org/10.4000/ree.1596
Cette synthèse vise à dégager les présupposés méthodologiques propres au cadre théorique d'une sociologie de la traduction à partir des articles de ce numéro. L'examen des réquisits épistémologiques montre le refus de tout positivisme au profit de l'implication du chercheur : cette posture assigne à ceux qui se présentent comme objet de la recherche d'être aussi des sujets participant aux transactions effectuées par l'ensemble des acteurs engagés dans une démarche de problématisation. La nature multidimensionnelle du terrain pose la question du pilotage des différentes étapes de la négociation où incertitude et hétérogénéité requièrent l'étayage sur des groupes statutaires différents et la reconnaissance d'un leadership institué. Une telle recherche-intervention vise à opérer des transformations structurelles au sein des institutions dans lesquelles interviennent les acteurs du terrain qui se constituent peu à peu en chercheur collectif ; le regard critique sur ces recherches permet de repérer la nécessité de recourir à des espaces intermédiaires pour faciliter ces transitions et multiplier les médiations. Un des points aveugles importants concerne la restitution des analyses heuristiques à communiquer aux acteurs de terrain pour consolider cette démarche collaborative.

Moussay, S. (2019). **Le tutorat mixte comme enjeu de l'alternance intégrative. Quelle expérience du travail d'observation du tuteur ESPE et du tuteur EPLE ?** In G. Escalié & É. Magendié (Éd.), *Alternance intégrative et formation des enseignants* (p. 61-73). Consulté à l'adresse https://hal.archives-ouvertes.fr/hal-02906929
Si le tutorat mixte est considéré comme un dispositif de formation susceptible d'optimiser l'alternance intégrative, l'étude met en évidence certaines difficultés vécues par le tuteur ESPE et le tuteur EPLE lorsqu'ils sont amenés à travailler ensemble lors de la visite formative.

Muller Mirza, N., & Albanèse, O. (2020). **Les pratiques de bénévoles auprès d'enfants migrants en difficulté scolaire : un système d'activité sous tension**. *Recherches en éducation*, (42). https://doi.org/10.4000/ree.1496

Aujourd'hui le bénévolat représente un domaine d'activité dynamique dans les sociétés européennes et joue un rôle important notamment auprès de populations en situation de vulnérabilité. Il occupe à cet égard une place à la fois en marge et en interaction avec les instances étatiques, et se trouve au cœur de tensions entre travail rémunéré et don de soi. Dans cet article, en adoptant une approche socioculturelle, nous présentons les résultats d'une étude qui visait à mieux comprendre le « travail bénévole » du point de vue des acteurs : comment les individus donnent-ils sens à un travail qui se présente généralement comme peu prescrit ? Quel type d'activité « réelle » mettent-ils en œuvre ? L'étude a porté sur des bénévoles engagés dans un collectif d'une ville de Suisse francophone, orienté vers le soutien scolaire d'enfants issus de la migration en difficulté à l'école. En articulant logiques singulières et logiques collectives, nous examinons la façon dont les personnes déploient les pratiques concrètes qui constituent leur « travail » et comment elles traduisent les contraintes des différents systèmes d'activité dans lesquels elles prennent place. À partir de l'analyse d'entretiens, nous montrons que les pratiques des bénévoles se trouvent au cœur de tensions qui relèvent de dynamiques identitaires mais aussi politiques.

Pavlin, S. (2020). **Who makes higher education graduates ready for work? The case of teacher education in Slovenia**. *European Journal of Education*, *55*(4), 489-500. https://doi.org/10.1111/ejed.12423
This paper starts by focusing on the problem of students' transition to working life in the domain of teacher education. Second, it problematises the teacher educator concept. Particular attention is paid to the question of which professionals regard themselves as teacher educators, and why. Third, it presents young teachers' acquisition of working experience and their transition from education to work in Slovenia as linked to three processes: practical and developmental work in schools during studies, traineeship period, and continuous professional learning. The general findings indicate that teacher education, training and professional development are all characterised by a sharp division between the role of academics (transmitters of theory), and senior teachers (facilitators of teachers' practical experiences). In our findings we demonstrate that young graduates lack a well-considered and integrated acquisition of practical experience as they move from education to the labour market. The paper is concluded with a call for better understanding the role of academics in preparing graduates for the world of work.

Pavlin, S., & Sušanj, Z. (2020a). **Challenges in developing the academic profession in the Western Balkans**. *European Journal of Education*, *55*(4), 573-586. https://doi.org/10.1111/ejed.12427
In this paper, we explore the developmental challenges facing the academic profession in Europe and especially in some Western Balkan countries, Croatia and Slovenia. First, we look at how the higher education environment determines key changes to the academic profession: expectations to demonstrate professional expertise, internationalisation, segmentation, and precarity. While these processes are mainly considered from the above perspective, we also examine the work of academics from within. Second, we discuss aspects of academic tasks, challenges of synchronising academic work with performance measures, intensification of work and expansion of bureaucratic tasks. Building on these perspectives, we introduce a qualitative pilot study that tests how these general trends described in the literature may be applied to given situations in five countries of former Yugoslavia: Slovenia, Croatia, Serbia, North

Macedonia and Kosovo. Although these countries cover a relatively small geographical area, the differences among them with respect to the economy, society and politics are important. Our findings suggest that problems accumulating in academic work in Slovenia and Croatia were in almost all of the surveyed aspects less problematic than in the three other observed countries.

Pavlin, S., & Sušanj, Z. (2020b). **The academic profession in the Western Balkans: Time for a turning point?** *European Journal of Education*, *55*(4), 471-475. https://doi.org/10.1111/ejed.12426

Rodriguez, L. A., Swain, W. A., & Springer, M. G. (2020). **Sorting Through Performance Evaluations: The Influence of Performance Evaluation Reform on Teacher Attrition and Mobility**. *American Educational Research Journal*, *57*(6), 2339-2377. https://doi.org/10.3102/0002831220910989
The federal Race to the Top initiative signified a shift in American education policy whereby accountability efforts moved from the school to the teacher level. Using administrative data from Tennessee, we explore whether evaluation reforms differentially influenced mobility patterns for teachers of varying effectiveness. We find that the rollout of a statewide evaluation system, even without punitive consequences, was associated with increased turnover; however, there was comparably greater retention of more effective teachers, with larger differences in turnover between highly and minimally effective teachers confined to urban districts and low-performing schools. These results imply that states and districts can increase exit rates of low-performing instructors in the absence of automatic dismissals, which is a pattern that our analyses suggest may not generalize beyond urban school settings.

Saqipi, B., & Rexhaj, X. (2020). **Moving from survival to development: Experiences in Kosovo from developing academic identity in a transitional context**. *European Journal of Education*, *55*(4), 528-541. https://doi.org/10.1111/ejed.12425
The purpose of the study on which this article reports was to elaborate on career trajectories of academics in Kosovo. Particular attention is given to efforts to follow international benchmarks such as the Bologna Process at key stages of Kosovo's historical and political development in the last three decades. In this qualitative study, semi-structured interviews were carried out with eleven academics with and without management experience as well as administrators. Findings revealed that Kosovo's higher education system is characterised by a weak organisational culture and an orientation towards externally driven change. Also, we found that academics perceived their role narrowly. The findings suggest that while higher education in Kosovo has moved towards adopting international benchmarks, the identity of the academics has not evolved in parallel to support the transition. A managerialist approach catalysed by the Bologna Process has helped a transition process in higher education in Kosovo. Finally, we propose that for a context in transition, local meaning-making processes for policy transfer are needed. Moving forward, institutional development should be led by academic managers and should serve the professionalisation of academics in Kosovo.

Spasovski, O., & Pecakovska, S. (2020). **The academic profession in North Macedonia: A never ending transition**. *European Journal of Education*, *55*(4), 501-513. https://doi.org/10.1111/ejed.12419

The context of Macedonian higher education has changed dramatically in the last fifteen years. A rapid increase in the number of public and private institutions and a greater diversity of higher education degrees have not been associated with improvements in quality. The research output of academic staff is modest; academics contribute little to the society's development. Academia in North Macedonia is under pressure due to chronic underfinancing of higher education and research, and an underdeveloped system of quality assurance, as well as growing expectations for relevance and internationalisation. This article presents an original empirical study on academic staff. It examines how 388 faculty at higher education institutions in North Macedonia perceived changes in the environment of the academic profession, and how changes in their working conditions potentially influence their academic identity and wellbeing. The results are compared to European data. Findings show that about half of research participants believed that the overall conditions for work and the quality of teaching, learning and research have deteriorated in recent years. This contributes to a perception of the academic profession as stressful and unattractive which results in lower levels of overall academic wellbeing which constitutes a threat to academic identity amongst the staff. Consequently, we expect further decreases in motivation, work ethic and productivity in the academic profession, as well as an increase in the desire of academics to leave Macedonia.

Sušanj, Z., Jakopec, A., & Đorić, A. (2020). **Academics' effectiveness and professional development in Croatia: Challenges for human resource management in higher education institutions**. *European Journal of Education*, *55*(4), 476-488. https://doi.org/10.1111/ejed.12422

The relationship between higher education and profound global economic, social, technological and political transformations underway in recent decades is attracting growing public and professional interest. In this context, governmental bodies, higher education institutions and academics are under pressure to improve the effectiveness and professional development of academic staff. This article explores the need to adapt current human resource management practices in higher education in Croatia as a response. The article presents recent empirical data from higher education institutions in Austria, Croatia and Finland collected in the international project "Modernisation of Higher Education Institutions through Enhancement of Human Resources Management Function". Descriptive indicators of current human resource management practices in higher education institutions reveal substantially different levels of development and use of certain practices to manage the effectiveness and professional development of academics. This article discusses the role of the human resource function at higher education institutions, the possibilities of using specific human resource development activities designed for different job roles held by academics, the importance of a performance management system that suits the academic environment, and the need for a strategic approach to human resource management at higher education institutions.

Vuković, M. B., Korotaj, B. V., & Ilić, B. Ć. (2020). **STEM colonization: Applying hard sciences' socio-organisational patterns and evaluation procedures to the soft sciences in Croatia**. *European Journal of Education*, *55*(4), 542-559. https://doi.org/10.1111/ejed.12421

Academic systems are undergoing changes in which the social organisation of research as well as patterns of scientific productivity in the humanities and social sciences

progressively resemble those in hard sciences. The hard and soft sciences are increasingly converging. This development can be observed in (a) publishing patterns, (b) the division of research, and (c) the internationalisation of research. This study explored the extent to which these changes occurring in academic systems in terms of a transformation of disciplinary practices are also becoming a trend in transitional post-socialist countries. We used Croatia as a case of a post socialist transitional context and compared it to Slovenia, a country with a similar past but somewhat different science policies and strategies. The results point to increasing convergence in some soft disciplines, visible in projectification and internationalisation of academic work as well as a significant change in the publishing patterns.

VUORIKARI, R., PUNIE, Y., & GIRALDEZ, M. C. (2020). ***Emerging technologies and the teaching profession***. Consulté à l'adresse https://publications.jrc.ec.europa.eu/repository/bitstream/JRC120183/emerging_technologies_teaching_profession_jrc.pdf
Les technologies émergentes d'aujourd'hui auront-elles un impact sur la profession enseignante à l'avenir ? Quelles parties des tâches d'enseignement ou des processus d'apprentissage pourraient être remplacées, améliorées et transformées par l'automatisation, les algorithmes et les machines ? Le rapport propose huit scénarios tournés vers l'avenir. Ces scénarios pour un futur proche visent à résoudre un certain nombre de problèmes qui, selon les éducateurs d'aujourd'hui, les empêchent de dispenser une éducation et une formation de qualité. Les principaux défis émergeant des scénarios concernent des considérations éthiques et l'évolution des compétences des professionnels de l'enseignement.

Numérique et éducation

Adanır, G. A., Borkoev, B., Saliyeva, K., & Muhametjanova, G. (2020). **Kyrgyz learners' and teachers' experiences and perceptions related to ICT use in high school courses**. *Education and Information Technologies*, *25*(6), 4765-4780. https://doi.org/10.1007/s10639-020-10196-2
The increasing use of ICT in education results in advantages for teaching and learning processes. In countries, especially in developing ones, it is essential to examine stakeholders' experiences and perceptions about ICT use in the courses. In this regard, this study firstly aims to investigate ICT use of Kyrgyz learners and teachers. Secondly, the study aims to examine learners' and teachers' perceptions with regard to ICT use in Science, Technology, Engineering, and Mathematics (STEM) courses in high schools in the Kyrgyz Republic. In the context of the study, two different questionnaires were applied. The first questionnaire was applied to high school learners, and the second questionnaire was applied to high school teachers. Participants of the study are 470 learners, and 162 STEM teachers. The results revealed frequencies of Internet and video use, the devices learners employ for Internet access, and online applications they prefer to use. Learners' perceptions of ICT use in STEM courses differ according to their grade levels, type of preparation for the course, and willingness to use online Kyrgyz language resources. The results also explored the difficulties that teachers experience in the courses, the course materials they use, and their expectations related to ICT use in the courses. The crucial

problems of Kyrgyz teachers are lack of ICT based materials, lack of equipment, and lack of training.

Al Hashlamoun, N., & Daouk, L. (2020). **Information technology teachers' perceptions of the benefits and efficacy of using online communities of practice when teaching computer skills classes**. *Education and Information Technologies*, *25*(6), 5753-5770. https://doi.org/10.1007/s10639-020-10242-z
This research explores the ways in which Information Technology (IT) teachers experience the use of online communities of practice (CoP) in teaching a computer course called Computer Skills 2 (WRCO2). This course is the second of two computer skills courses in the Work Readiness Program (WRP) running at a Higher Education Institution in the Middle East (HEIME). This course focuses on the use of prior foundational knowledge acquired in the first course to develop understanding and proficiency in the use and application of computer skills and concepts. A phenomenological approach has been chosen to help understand and explore the qualitatively different ways in which particular teachers experience the use of online CoP as a social and collaborative learning system. Two specific questions were considered: (1) "How did teachers experience the use of online CoP in teaching the computer skills 2 classes?" (2) "What benefits, if any, have been derived from using online CoP in teaching this course?" Data collection in this study was conducted using a digitally recorded unstructured interview, which allowed the participants to voice their experiences. As a theoretical framework, the basic elements: domain, community and practice were considered (Lave & Wenger, 1991; Wenger, 1998; Wenger, McDermott, & Snyder, 2002). The data explicitation process (as defined and used by (Giorgi, 2009)) resulted in the identification of a number of themes. Similar themes were then grouped together to form four central themes representing the essence of the original ones. The central themes were: (1) to promote student collaboration; (2) to redefine the teacher's role; (3) to encourage student engagement; and (4) to manage the teachers' increased workload. This was followed by a discussion of the benefits and challenges arising from using online CoP in teaching the course, as well as the description of the limitations within this study.

Al-Adwan, A. S. (2020). **Investigating the drivers and barriers to MOOCs adoption: The perspective of TAM**. *Education and Information Technologies*, *25*(6), 5771-5795. https://doi.org/10.1007/s10639-020-10250-z
Massive Open Online Courses (MOOCs) are emerging as the new trend for modern higher education institutions. Student acceptance is viewed as the key determinant for the success of MOOCs. This study intends to examine factors influencing higher education students' behavioral intention to adopt MOOCs. Thus, this study proposes the use of a modified Technology Acceptance Model (TAM). Data is collected via an online survey from a sample of 403 participants in Jordan. Structural equation modeling (SEM) is used to assess the accuracy of the research model. The results reveal that 1) students' behavioral intention to adopt MOOCs is positively affected by the perceived ease of use and by the perceived usefulness, 2) self-regulated learning has both a negative direct and indirect (through perceived usefulness) influence on behavioral intention, 3) computer self-efficacy and perceived convenience have positive indirect effects on behavioral intention through the perceived usefulness and perceived ease of use, and 4) learning tradition has a negative indirect effect on behavioral intention through self-regulated learning. Based on the results, various implications (both practical and theoretical), and suggestions for future research, have been highlighted.

Alarcón, R., Jiménez, E. del P., & Vicente-Yagüe, M. I. de. (2020). **Development and validation of the DIGIGLO, a tool for assessing the digital competence of educators**. *British Journal of Educational Technology*, *51*(6), 2407-2421. https://doi.org/10.1111/bjet.12919
Educators must be able to adapt to the opportunities provided by information and communication technologies, making use of those which are best suited to meeting their students' needs and identifying areas of practice in which they themselves need to develop their skills. The European Framework for the Digital Competence of Educators (DigCompEdu) proposes 22 basic competences, organised into six areas, which educators should ideally acquire. The present study seeks to build on this Framework by developing and validating an assessment tool that considers a total of eight areas: the six areas covered by DigCompEdu and two new areas corresponding to extrinsic factors in the digital competence of educators. The latter refers specifically to the digital resources and support services that are available to educators in their working environment. A total of 509 teacher educators from across Spain and Latin America completed the 29-item DIGIGLO questionnaire. Analysis of the Spanish language instrument's construct validity and psychometric properties showed it to be a valid and reliable tool for assessing the digital competence of educators across the eight areas considered.

Alghamdi, J., & Holland, C. (2020). **A comparative analysis of policies, strategies and programmes for information and communication technology integration in education in the Kingdom of Saudi Arabia and the republic of Ireland**. *Education and Information Technologies*, *25*(6), 4721-4745. https://doi.org/10.1007/s10639-020-10169-5
This paper provides a comparative analysis of policies, strategies and programmes for Information and Communication Technology (ICT) integration in primary and post-primary education, that were active in the Kingdom of Saudi Arabia (KSA) and in the Republic of Ireland in 2016. The analysis showed that while KSA was a relative newcomer to the integration of ICT in education, it was responsive in seeking to enhance the quality of education and support transitions to the knowledge economy through a range of initiatives, including: reform of the curriculum, provision of teacher professional development in ICT integration, and supply of computer technologies and infrastructure. However, as in the Irish context, the framing of the ICT in education' policies, strategies and programmes needed to be strengthened through participatory partnerships with key stakeholders that endured throughout the life-cycle of ICT policy implementation in primary and post-primary settings. Furthermore, the review showed a need for governments in both jurisdictions to make better provision for financial and human resourcing to fully operationalize the teacher training and supports necessary for effective integration by teachers of ICT in primary and post-primary settings. Finally, the evaluation protocols within ICT in education' policies, strategies and programmes in both countries needed to be re-casted to make evidence of their enactment publicly available in a timely manner. Moreover, the resultant evaluation reports further needed to be detailed at a level that made visible the national progress on ICT integration in schools, and the corresponding impact on learners' ICT skills and broader competencies.

Almaiah, M. A., Al-Khasawneh, A., & Althunibat, A. (2020). **Exploring the critical challenges and factors influencing the E-learning system usage during COVID-19 pandemic**. *Education and Information Technologies*, *25*(6), 5261-5280. https://doi.org/10.1007/s10639-020-10219-y

The provision and usage of online and e-learning system is becoming the main challenge for many universities during COVID-19 pandemic. E-learning system such as Blackboard has several fantastic features that would be valuable for use during this COVID-19 pandemic. However, the successful usage of e-learning system relies on understanding the adoption factors as well as the main challenges that face the current e-learning systems. There is lack of agreement about the critical challenges and factors that shape the successful usage of e-learning system during COVID-19 pandemic; hence, a clear gap has been identified in the knowledge on the critical challenges and factors of e-learning usage during this pandemic. Therefore, this study aims to explore the critical challenges that face the current e-learning systems and investigate the main factors that support the usage of e-learning system during COVID-19 pandemic. This study employed the interview method using thematic analysis through NVivo software. The interview was conducted with 30 students and 31 experts in e-learning systems at six universities from Jordan and Saudi Arabia. The findings of this study offer useful suggestions for policy-makers, designers, developers and researchers, which will enable them to get better acquainted with the key aspects of the e-learning system usage successfully during COVID-19 pandemic.

Al-Qaysi, N., Mohamad-Nordin, N., & Al-Emran, M. (2020). **Employing the technology acceptance model in social media: A systematic review**. *Education and Information Technologies*, *25*(6), 4961-5002. https://doi.org/10.1007/s10639-020-10197-1
A number of systematic reviews were conducted with respect to social media on the one hand, and the Technology Acceptance Model (TAM) application, on the other hand. However, analyzing the TAM in social media context is still questioned and requires further examination. The main objective of this systematic review is to analyze the up-to-date social media studies that involved the TAM as the primary theoretical model. In that, 57 research articles ranged between 2009 and 2018 were critically analyzed. The main research findings indicated that studying social media adoption and usage among students was the most frequent research problem tackled. Additionally, the majority of the analyzed studies have been extended with external factors. It was also revealed that perceived enjoyment, subjective norm, self-efficacy, perceived critical mass, perceived connectedness, perceived security, and perceived trust were the most frequent factors that significantly extended the TAM. Besides, questionnaire surveys were found to be the most commonly used methods for data collection. In addition, the majority of the analyzed studies were conducted in higher education environments. Furthermore, Facebook was found to be the most common social media tool used in most of the analyzed studies. To that end, the results of this systematic review afford a better understanding of the TAM-based social media studies and form an essential reference for future research in the social media context.

Artun, H., Durukan, A., & Temur, A. (2020). **Effects of virtual reality enriched science laboratory activities on pre-service science teachers' science process skills**. *Education and Information Technologies*, *25*(6), 5477-5498. https://doi.org/10.1007/s10639-020-10220-5
Innovative instructional technologies, especially virtual reality devices, are becoming more prominent and feasible in science education. Concerning science laboratories, activities enriched with virtual reality technology have the potential to make unobservable phenomena accessible in any school. This virtual reality technology has the potential to lead in a new milestone in terms of acquisition of the science process

skills, not only in secondary school students but also in the training of pre-service science teachers. This mixed-method study aimed to investigate the effect of virtual reality enriched laboratory activities' effects on the science process skills of pre-service science teachers in Turkey. The pretest-posttest control group quasi-experimental intervention was conducted with 54 3rd-grade pre-service science teachers enrolled in a state university in the Eastern Anatolia region of Turkey. There were 24 participants in the experimental and 30 participants in the control group. The science process skills test was administered to both groups before and after the six-week-long intervention. Also, semi-structured interviews were conducted with six participants from the experimental group after the intervention process. Even though the groups did not differ at the end of the intervention, the increase of the scores in the experimental group was found to be statistically significant, concerning the overall test scores and the sub-dimension of Experimenting. Furthermore, qualitative findings signify a prominent emphasis on Observing. The potential causations and derived implications are discussed.

Arvanitaki, M., & Zaranis, N. (2020). **The use of ICT in teaching geometry in primary school**. *Education and Information Technologies*, *25*(6), 5003-5016. https://doi.org/10.1007/s10639-020-10210-7
The purpose of this study is to investigate if information and communications technology (ICT) helps improve students' achievement in geometry regarding solids' nets. Our research compares the achievement of the students in the experimental group taught using our ICT intervention to students in the control group taught by traditional teaching methodology. In particular, we designed a teaching intervention with educational activities, in which we incorporated Augmented Reality (AR) technology to test whether geometry teaching is enhanced. The study dealt with primary school students of fourth grade, who were divided into two groups (experimental and control). Students in both groups were pre-tested and post-tested for their achievement in geometry. The results of the study indicated that teaching and learning through ICT is an interactive process for students at primary school and has a positive effect on learning geometry as compared to the traditional teaching method.

Atabek, O. (2020). **Experienced educators' suggestions for solutions to the challenges to technology integration**. *Education and Information Technologies*, *25*(6), 5669-5685. https://doi.org/10.1007/s10639-020-10243-y
The purpose of the research, which was the second phase of a two-phase study, was to reveal experienced educators' suggestions for solutions to the challenges to technology integration. Participants were 117 experienced educators as experts in their fields, selected and invited by Turkish Ministry of Education from among ministerial, provincial, and school level managers and experienced teachers to participate in a workshop on "goals and priorities of national education" (N = 117). Initially, suggestions of experienced educators on the solutions to barriers of technology integration were elicited from the participants of the sub-commission titled "Increasing the prevalence of the use of technological tools in education". Solution suggestions were developed into a questionnaire, which then was used to survey the workshop attendees. Data were analysed by principal axis factoring with direct oblimin rotation, Mann-Whitney-U and Kruskal-Wallis-H tests, as well as Spearman's ρ correlation coefficient. Analyses revealed that, solution suggestions fall into three categories: Train, Allow Time, and Supply. In order to overcome barriers to technology integration, experienced educators suggested (a) improving the quality of inservice and preservice training, (b) allowing teachers more

time by simplifying and reducing the number of courses in the instructional programs, and (c) supplying teachers with technology incentives, quality educational content, technical assistance, and information technology solutions. Analyses revealed that Train, Allow Time, or Supply did not differ according to sex, academic degree, or job position of the participants. However, older managers have been found to have slightly weaker beliefs in developing technology competencies through education.

Barsom, E. Z., Duijm, R. D., Dusseljee-Peute, L. W. P., Boom, E. B. L. der, Lieshout, E. J. van, Jaspers, M. W., & Schijven, M. P. (2020). **Cardiopulmonary resuscitation training for high school students using an immersive 360-degree virtual reality environment**. *British Journal of Educational Technology*, *51*(6), 2050-2062. https://doi.org/10.1111/bjet.13025
Cardiopulmonary resuscitation (CPR) is a lifesaving emergency procedure. To increase survival rates, it is recommended to increase the number of high school students who know how to perform CPR. We have developed an immersive "Virtual Reality (VR) Resuscitation Training" to train the theoretical knowledge of CPR in which trainees must save the life of the patient in a virtual environment. This paper presents a randomized controlled study with a pre-posttest design to explore whether a VR enhanced curriculum improves high school students' theoretical CPR knowledge. Forty students without previous CPR experience in the past year were randomly assigned to either the VR group or the standard group. The VR group had a significant higher increase of correct answers in comparison with the Standard group. More importantly, the gain in score on taking the correct sequence of CPR steps was significant favouring the VR-enhanced protocol over the Standard protocol. Therefore, the use of a VR training for CPR training appears to be an effective learning method for non-medical students and may be of great value skilling high school students in becoming adequate CPR providers.

BEDUCHAUD, F., COUDRAY, A., & COUREAU-FALQUERHO, E. (2020a). ***École, numérique et confinement : premier regard sur la situation à l'international***. Consulté à l'adresse https://www.reseau-canope.fr/fileadmin/user_upload/Projets/agence_des_usages/confinement/NoteInternational_web.pdf
Comment les différents systèmes éducatifs et leurs acteurs ont-ils fait face à la pandémie ? Quelles décisions politiques ont été mises en œuvre pour répondre aux enjeux éducatifs et sociaux ? Comment les élèves et leurs familles ont-ils réagi et se sont-ils adaptés à ces nouvelles conditions d'enseignement et d'apprentissage ? Élaborée en préparation des États généraux du numérique pour l'Éducation et réalisé par l'Ifé-ENS et par Réseau Canopé, cette note d'information vise à alimenter la réflexion des acteurs et instances de l'éducation en proposant un panorama de la situation internationale, reposant sur des études et rapports essentiellement publiés entre février et août 2020.

BEDUCHAUD, F., COUDRAY, A., & COUREAU-FALQUERHO, E. (2020b). ***École, numérique et confinement : quels sont les premiers résultats de la recherche en France ?*** Consulté à l'adresse https://f-origin.hypotheses.org/wp-content/blogs.dir/7320/files/2020/10/EGN_IfeCanope_Note_France_web_oct20.pdf
Réalisé en collaboration par l'Ifé-ENS de Lyon et par Réseau Canopé, le document propose une synthèse à partir des premiers résultats disponibles suite aux enquêtes lancées au printemps 2020 auprès des acteurs de l'éducation. Il constitue ainsi le complément de la note précédemment publiée sur la situation à l'international. Il examine la façon dont le système éducatif français s'est adapté et organisé pendant le

confinement, puis pour accompagner le déconfinement. Il s'intéresse en particulier aux effets repérés de cette période inédite et « extra-ordinaire » sur les acteurs, sur les pratiques professionnelles, sur les relations entre acteurs, au sein de l'école, et sur les relations avec les élèves et leurs familles.

Behnagh, R. F., & Yasrebi, S. (2020). **An examination of constructivist educational technologies: Key affordances and conditions**. *British Journal of Educational Technology*, *51*(6), 1907-1919. https://doi.org/10.1111/bjet.13036
Existing research has looked at the potentials, affordances and the productive use of educational technologies to support collaborative learning. Many of these technology tools are purportedly constructed under principles of social constructivist theory of learning. It is timely to examine whether and how these tools, their affordances, and the way they are pedagogically implemented have adhered to and expanded the theory of constructivism. This paper examines a class of constructivist learning technologies called computer-supported collaborated learning (CSCL) in terms of their affordances in light of socio-cultural theory of learning and socially shared regulation of learning. We argue that CSCL tools adhere to most of the tenets of constructivism and shared regulation of learning in terms of social outcomes and productive use and discuss gaps where constructivist educational technology tools and the associated pedagogical practices need to be improved (such as addressing inequalities of access).

Bin, E., Islam, A. Y. M. A., Gu, X., Spector, J. M., & Wang, F. (2020). **A study of Chinese technical and vocational college teachers' adoption and gratification in new technologies**. *British Journal of Educational Technology*, *51*(6), 2359-2375. https://doi.org/10.1111/bjet.12915
The problem motivating this research is the rapid introduction of educational technologies and the strong push to use new technologies in technical and vocational training in China coupled with varied responses and uneven adoption of new tools on the part of practitioners. This study investigated the factors that influence technical and vocational college teachers' adoption and appreciation of information and communication technology (ICT) in China using the technology adoption and gratification (TAG) model. At total of 535 teachers from public technical and vocational colleges were surveyed using a purposive sampling procedure. The survey data were analyzed through structural equation modeling. Findings suggest that the use of ICT had three primary determinants: teaching purpose, research purpose and academic purpose. Technical and vocational college teachers' technology adoption and gratification was directly and indirectly predicted by their computer self-efficacy, intention to use, perceived ease of use and usefulness of ICT. Most importantly, the TAG model accounted for 77% of the variance in teachers' gratification using those predictive variables. This research successfully applied the TAG model and it further fosters recommendations for future investigations. This study contributes to theoretical, methodical and practical understandings of the use of ICT in technical and vocational education, which has been much less explored than in K-12 education and university settings.

BLONS-PIERRE, C. (2019). **Reconnaissance et validation des acquis de la mobilité géographique et de l'apprentissage à distance : virtualité ou réalité ?** *Journal of international mobility. Moving for education training and research*, (7), 3-22. Consulté à

l'adresse https://www.cairn.info/revue-journal-of-international-mobility-2019-1-page-3.htm?contenu=article
La mobilité géographique et physique des étudiants et des apprentis s'est étendue ainsi que les possibilités de l'enseignement à distance via les nouvelles technologies, à tel point qu'il est possible, à l'heure actuelle, de se demander si l'enseignement dématérialisé massif à distance ne serait pas la solution qui permettrait un accès universel aux savoirs et savoir-faire. Cependant demeure le problème de la reconnaissance et de la validation des acquis obtenus hors du cadre de l'apprentissage formel. L'auteure examine sous quelles conditions et avec quels outils les acquis de la mobilité géographique et de l'enseignement à distance massif pourraient être reconnus et validés, que ce soit dans un contexte académique ou professionnel.

Bower, M., DeWitt, D., & Lai, J. W. M. (2020). **Reasons associated with preservice teachers' intention to use immersive virtual reality in education**. *British Journal of Educational Technology*, *51*(6), 2214-2232. https://doi.org/10.1111/bjet.13009
The recent interest in the use of Immersive Virtual Reality (IVR) in education seems to correspond with the increased affordability, accessibility and functionality of IVR hardware and software. IVR has the potential to enhance immersion, improve spatial capabilities, promote empathy, increase motivation and possibly improve learning outcomes. However, the extent to which teachers capitalise on these potentials in the future depends their perceptions of IVR and their behavioural intentions to use it. Accordingly, this study aimed to identify relevant factors and influences relating to preservice teachers' behavioural intention to use IVR, using the Unified Theory of Acceptance and Use of Technology 2 (UTAUT2) model. Confirmatory factor analysis revealed that UTAUT2 provided a suitable model to describe preservice teachers' perceptions of IVR on all dimensions (performance expectancy, effort expectancy, social influence, facilitating conditions, hedonic motivation, price value, habit and behavioural intention), with hedonic motivation receiving the highest scores and habit scoring the lowest. Interview responses revealed the reasons for the substantial variation in preservice teacher perceptions, which depended on a range of external- ("first-order"), internal- ("second-order") and design ("third-order")-related issues. Implications for schools, educational leaders and teacher education are discussed.

Bower, M., & Jong, M. S.-Y. (2020). **Immersive virtual reality in education**. *British Journal of Educational Technology*, *51*(6), 1981-1990. https://doi.org/10.1111/bjet.13038

Çakır, İ., & Özer, M. (2020). **Fostering intuitive competence in L2 for a better performance in EAP writing through fraze.it in a Turkish context**. *Education and Information Technologies*, *25*(6), 5405-5426. https://doi.org/10.1007/s10639-020-10225-0
Online corpus referencing through web applications such as fraze.it can help non-native language teachers train tertiary level learners of academic writing by providing them with native or near-native perspectives which come within concordance lines derived from authentic sources. The present study features a semi-experimental design in order to reach an understanding of the impact of simulated academic reading (SAR), which denotes a sentence-based approach to getting students familiar with the authentic use of English in academic texts. The sample (N = 62) is comprised of English for academic purposes (EAP) students taking a grammar course with a specific focus on academic writing at the language school of a state university in Turkey. In order to see the difference that SAR could make, the sample was split into an experimental group (n = 32) and a

control group (n = 30). Whilst the experimental group received SAR-weighted grammar aid through effective teacher guidance for seven weeks, the control group was required to follow the guidelines exerted by the existing curriculum. The quantitative data were collected through the application of a delayed pre-test and a post-test, and the scores of the learners in the two groups were compared through a paired sample t-test. The qualitative data was collected by means of an online survey of four open ended questions, and a corpus analysis was conducted to reach common codes and themes emerging in the responses. The difference between the test scores of the two groups were statistically significant. This overall trend was concurrent in the responses to the survey as well. Further research is needed to see the extent to which SAR can change the way learners learn in the long run, though.

Chen, H.-J. (2020). **Clarifying the impact of surprise in e-learning system design based on university students with multiple learning goals orientation**. *Education and Information Technologies*, *25*(6), 5873-5892. https://doi.org/10.1007/s10639-020-10249-6
E-learning systems, assessed through computers and/or mobile devices, are widely adopted to assist university students' learning. Nonetheless, the impact of surprise in the design of e-learning systems still needs clarification. The link of learners' multiple goals orientation to their e-learning system use behavior also lacks clarification. This study, therefore, clarifies the issues based on the updated IS success model. Data of two hundred and forty-one university learners who used e-learning systems in their course learning were gathered and analyzed with SEM. The results validated the significant association of surprise with university students' system use and user satisfaction that facilitated the transfer of the learning to their overall learning outcome. However, learners of different learning goals orientation presented different patterns of learning transfer through e-learning systems. The results reflected different roles of e-learning to learners of different learning goals orientation in their learning adaptation.

Cheng, K.-H., & Tsai, C.-C. (2020). **Students' motivational beliefs and strategies, perceived immersion and attitudes towards science learning with immersive virtual reality: A partial least squares analysis**. *British Journal of Educational Technology*, *51*(6), 2139-2158. https://doi.org/10.1111/bjet.12956
Researchers have been devoted to exploring the impacts of immersive virtual reality (IVR) on education in recent years. However, efforts to probe the role of students' learning traits such as motivated strategies for learning in their IVR learning have been limited. Most studies commonly analyzed learners' perceptions of immersion with a single construct rather than with multiple constructs. Therefore, this study implemented immersive virtual field trips for science learning in three elementary classes (a total of 76 students) for understanding how students' inherent self-efficacy, intrinsic value and self-regulation for science learning related to their perceived immersion (ie, basic attention, temporal dissociation, transportation, emotional involvement, enjoyment) and attitudes (ie, perceived usefulness and behaviors of IVR learning) when engaging in IVR learning environments. The reliability and validity of the constructs in the PLS-SEM path modeling were first confirmed. This study further identified that motivation of intrinsic value and self-regulation may play a dominant role in the students' learning attitudes in IVR environments for science education. It was also verified that the students' immersive experiences of attention and enjoyment significantly mediated their IVR learning. Notably, the students with lower levels of self-efficacy may have been more immersed in IVR environments and further held positive learning attitudes. The findings of this study

have implications for practicing IVR-related learning activities in elementary classrooms with considerations of learners' psychological characteristics and perceived immersion when confronting IVR technology.

Cheng, M.-T., Huang, W.-Y., & Hsu, M.-E. (2020). **Does emotion matter? An investigation into the relationship between emotions and science learning outcomes in a game-based learning environment**. *British Journal of Educational Technology*, *51*(6), 2233-2251. https://doi.org/10.1111/bjet.12896
Game-based learning environments typically elicit a variety of emotions; however, the influence of emotions on game-based learning is basically underemphasized. This study sought to investigate how emotions are related to science learning in a gaming context. Humunology, an educational game for learning about the human immune system, was used, and 112 seventh graders aged 12–13 years old took part. The results indicated that learning through playing Humunology was effective and that the long-term effect of this approach on learning retention was promising in comparison to traditional web-based instruction. A cluster analysis by the K-means algorithm categorized the students who learned through playing Humunology into two core groups. Students in cluster 1 experienced substantial levels of both positive and negative emotions while learning through playing Humunology, whereas the students in cluster 2 experienced primarily positive emotions. Although students who experienced primarily positive emotions had better learning outcomes right after playing Humunology, the learning effect declined as time passed, to the extent that they performed the same as those who experienced both positive and negative emotions in terms of long-term learning retention. The significant findings of the study and their interpretations are discussed, and limitations and suggestions for future work are provided.

Chuang, H.-H., Shih, C.-L., & Cheng, M.-M. (2020). **Teachers' perceptions of culturally responsive teaching in technology-supported learning environments**. *British Journal of Educational Technology*, *51*(6), 2442-2460. https://doi.org/10.1111/bjet.12921
This study developed and validated an instrument for assessing teachers' perceptions of culturally responsive teaching (CRT) in technology-supported learning environments (TSLE). Data were collected from a total of 257 elementary and secondary school teachers in Taiwan during March and April 2018 to verify the reliability and construct validity of the instrument. The construct validity of this instrument was examined via confirmatory factor analysis and a multidimensional partial credit model for item responses in which an 18-item instrument (4 items regarding cultural values, 3 regarding culturally relevant curricula, 4 regarding cultural scaffolding, 3 regarding multicultural collaboration, and 4 regarding integrating with technology and multicultural perspectives) was validated after the elimination of 4 items. The reliability of the instrument was found to be satisfactory according to multidimensional versions of the partial credit model analysis. Regression analysis showed that technology experiences and technology experiences in teaching were positive predictors while school level was a negative predictor of teachers' perceived CRT in TSLE. Elementary school teachers were more likely to have positive perceptions of CRT in TSLE than were secondary school teachers.

Corsby, C. L. T., & Bryant, A. (2020). **"I felt like I was missing out on something": an evaluation of using remote technology in the classroom**. *Education and Information Technologies*, *25*(6), 4897-4914. https://doi.org/10.1007/s10639-020-10207-2

As technology develops in Higher Education (HE), distance learning has adopted many different guises and supports many different needs (Keane 2013). The purpose of this study was to evaluate the use of Double Robotics on a Doctoral (level 8) postgraduate course at a HE institution. The aim of this project was to generate an understanding of student and tutor experiences more generally, while examining the feasibility and impact of Double Robotics within a doctoral programme more specifically. Data were collected through a series of focus group interviews with the student and tutors over the course of a single semester (10-weeks). The data were subject to an inductive thematic analysis (Braun and Clarke 2006, 2013). The findings of the study shed light on the interactive pitfalls of the technology and contribute to understanding the experiences of distance learners' engagement. Four key themes were identified: quality of technology, classroom familiarity, tutor facilitation and user isolation. The significance of this study lies not only in assessing the feasibility of Double Robotics but, specifically, shedding light on the nuanced understanding tutors require to enrol and engage distance learners remotely. Most notable, the 'isolation' of the learner points to a heightened awareness of context that can help tutors develop robust and durable environments, which embrace both traditional classroom settings and facilitate the addition of distance learners. Building upon Tucker (2013), technological advancements in the classroom must be carefully designed to appreciate the context of the learning environment, the teacher, and the pedagogic experiences of the learners.

Dubé, A. K., Kacmaz, G., Wen, R., Alam, S. S., & Xu, C. (2020). **Identifying quality educational apps: Lessons from 'top' mathematics apps in the Apple App store**. *Education and Information Technologies*, *25*(6), 5389-5404. https://doi.org/10.1007/s10639-020-10234-z
There are 80,000+ educational apps in the Apple App Store and math apps are the most common. We searched for 'math' in the education category and selected the top 10 apps for each of the 3 filters provided by Apple (Relevance, Popularity, Rating) and 3 age categories (0–5, 6–8, 9–11). Using these top 90 apps, we examined the basic information (e.g., price), educational content, and user ratings to see whether the information provided in app stores helps parents and educators find quality educational apps. There was a surprising lack of transparency and meaningful information. The Apple App store needs to explain how it selects 'top' apps and developers need to provide benchmarks of educational quality in their app descriptions.

Elatawy, S. M., Hawa, D. M., Ewees, A. A., & Saad, A. M. (2020). **Recognition system for alphabet Arabic sign language using neutrosophic and fuzzy c-means**. *Education and Information Technologies*, *25*(6), 5601-5616. https://doi.org/10.1007/s10639-020-10184-6
Sign language is considered as the important communication means among the normal people and the deaf. Therefore, developing communication systems to help those people is an important issue. In this paper, the neutrosophic technique and fuzzy c-means are applied to detect and recognize the alphabet Arabic sign language. The proposed system starts by using a gaussian filter to delete the noise and prepare the input image to be used in the next step. After that, the image is converted to the neutrosophic domain then its features are extracted to start the classification phase; then the corresponding letter is displayed in the proposed system. The results showed good performance for the proposed system whereas, the total classification accuracy reached 91% in the experiment.

européenne, C., & Commission européenne. (2020). ***Digital education action plan 2021-2027: Resetting education and training for the digital age***. Consulté à l'adresse https://ec.europa.eu/education/sites/education/files/document-library-docs/deap-communication-sept2020_en.pdf
Le plan d'action en matière d'éducation numérique (2021-2027) expose la vision de la Commission européenne pour une éducation numérique de qualité, inclusive et accessible en Europe. Il s'agit d'un appel à agir en faveur d'une coopération plus étroite au niveau européen pour tirer les enseignements de la crise du coronavirus, qui amène à utiliser les technologies dans l'éducation et la formation à une échelle jamais connue jusqu'alors et adapter les systèmes d'éducation et de formation à l'ère du numérique. Il s'articule autour de deux priorités stratégiques : favoriser la mise en place d'un écosystème d'éducation numérique hautement performant, renforcer les aptitudes et compétences numériques pertinentes pour la transformation numérique.

Fraj-Andrés, E., Lucia-Palacios, L., & Pérez-López, R. (2020). **Reducing resistance to repeating a wiki activity: What can teachers do?** *British Journal of Educational Technology*, *51*(6), 2286-2305. https://doi.org/10.1111/bjet.12903
Wiki activities are among the most common online learning activities examined by previous research due to the collaborative learning properties wikis offer; however, students are not always satisfied with such activities. Due to this dissatisfaction, learners may finish the wiki activities but not repeat them. While wikis are primarily used to collate content, the wiki activity proposed in this study is used foremost as a discussion forum. Drawing on the value-based adoption model, this study examines the influence of perceived benefits, enjoyment, peer interaction, ease of use, and time and effort costs to explain students' reluctance to repeat the wiki activity. Furthermore, it assesses the moderating effect of peer interaction on the other variables. A survey was conducted, and 110 valid responses obtained. The findings reveal that the need to invest a lot of time and effort into the activity is the main reason for not repeating the activity proposed, while peer interaction and enjoyment help to reduce these perceived costs. Therefore, teachers should emphasize the benefits of in-group wiki activities with regard to not only the final learning performance but also the activities' hedonic and social value. Furthermore, teachers should offer a training session and a user's guide for each specific activity, as well as courses about the team management.

GAUDREAU, H., & LEMIEUX, M.-M. (2020). ***L'intelligence artificielle en éducation : un aperçu des possibilités et des enjeux***. Consulté à l'adresse https://www.cse.gouv.qc.ca/wp-content/uploads/2020/11/50-2113-ER-intelligence-artificielle-en-education-1.pdf
Le rapport sur l'état et les besoins de l'éducation 2018-2020 au Québec porte sur le numérique en éducation. Ce document de recherche, réalisé dans le cadre des travaux préparatoires, propose une réflexion sur les possibilités de l'intelligence artificielle (IA) et les défis qu'elle nous invite à relever. À partir d'une recension d'écrits scientifiques et d'audition d'experts, ce texte présente des exemples d'applications d'IA à des fins éducatives. Il nomme aussi certains enjeux soulevés par le développement des systèmes d'IA. Par exemple, ces systèmes devraient s'inscrire dans une démarche de recherche du bien commun et dans le respect de la personne et de la diversité. Ces enjeux entraînent une responsabilité nouvelle pour les systèmes éducatifs.

Ghallabi, S., Essalmi, F., Jemni, M., & Kinshuk. (2020). **Learner modeling in cloud computing**. *Education and Information Technologies*, *25*(6), 5581-5599. https://doi.org/10.1007/s10639-020-10185-5
With the emergence of technology, the personalization of e-learning systems is enhanced. These systems use a set of parameters for personalizing courses. However, in literature, these parameters are not based on classification and optimization algorithms to implement them in the cloud. Cloud computing is a new model of computing where standard and virtualized resources are provided as a service through the Internet. This paper proposes an approach that allows learner modeling in the cloud where these parameters are integrated. The suggested approach is based on the support vector machine algorithm, which analyzes the learners' traces to find the best classification of learners through selected parameters with a low cost. An experimentation is conducted to validate this approach. This experimentation is based on the produced traces for learner modeling. The obtained results show that this approach represents the learner model with low operation costs compared to classic systems (no cloud).

Ghapanchi, A. H., Purarjomandlangrudi, A., McAndrew, A., & Miao, Y. (2020). **Investigating the impact of space design, visual attractiveness and perceived instructor presence on student adoption of learning management systems**. *Education and Information Technologies*, *25*(6), 5053-5066. https://doi.org/10.1007/s10639-020-10204-5
Education industry has available a range of educational technologies to support student learning. A Learning Management System (LMS) is one of the most important educational technologies used in the tertiary sector, providing an online platform for teaching, as well as supporting student learning. Despite all the effort put through deployment of most LMSs, in many universities, a below expectation student engagement and acceptance of the LMS is normally reported. To address this issue, this paper develops a conceptual model and investigates the impact of space design, visual attractiveness and perceived instructor presence on student acceptance of LMS. The results generally confirmed the positive impact of space design, visual attractiveness and perceived instructor presence on student acceptance of LMS. The only hypothesis which was not confirmed by the data of this study was the impact of perceived instructor's presence on the LMS perceived usefulness.

Goudouris, C., de Abreu Mol, A. C., Legey, A. P., de Carvalho, P. V. R., Freire, J. L., Martins, B. M. R., & Jatobá, A. (2020). **Applying flow-based principles in teaching computer programming to high school students: A semiotic perspective**. *Education and Information Technologies*, *25*(6), 5451-5476. https://doi.org/10.1007/s10639-020-10193-5
Teaching computer programming to children and adolescents has become popular in recent years. This popularity has resulted in increased research into techniques for teaching introductory programming using visual languages, especially block-based languages. This study aims to explore new possibilities for teaching programming by adopting a hybrid environment between the descriptive and flow-oriented paradigm. The use of the Semiotic Engineering's Communicability Evaluation Method (CEM), a theoretical line of Human-Computer Interaction based on communication, was applied to assess its usefulness to a high school audience. The teaching activities took place in cycles, with successive refinements, forming an action-research strategy. In this way, we conducted a descriptive case study with a qualitative analysis of the data, in which we collected a participant observation scheme. Our results established that the use of CEM

in education was appropriate, that the proposed environment was suitable for the study, and the topics were relevant to the target audience.

Hamhuis, E., Glas, C., & Meelissen, M. (2020). **Tablet assessment in primary education: Are there performance differences between TIMSS' paper-and-pencil test and tablet test among Dutch grade-four students?** *British Journal of Educational Technology*, *51*(6), 2340-2358. https://doi.org/10.1111/bjet.12914
Over the last two decades, the educational use of digital devices, including digital assessments, has become a regular feature of teaching in primary education in the Netherlands. However, researchers have not reached a consensus about the so-called "mode effect," which refers to the possible impact of using computer-based tests (CBT) instead of paper-and-pencil-based tests (PBT) to assess student performance. Some researchers suggest that the occurrence of a mode effect might be related to the type of device used, the subject being assessed and the characteristics of both the test and the students taking the test. The international TIMSS 2019 Equivalence Study offered the opportunity to explore possible performance differences between a PBT and a tablet assessment in mathematics and science among Dutch primary school students. In the spring of 2017, the TIMSS PBT and tablet test were administered to 532 grade-four Dutch students. Item response theory was used to explore potential mode effects. This exploration revealed no significant differences in the student ability scales between the paper and the tablet tests for mathematics and science. Also, no systematic mode effects were found for the items with high reading demand. A marginal difference was found for girls outperforming boys on the TIMSS tablet test, although no gender differences in achievement were found for the PBT.

Harley, J. M., Liu, Y., Ahn, B. "Tony", Lajoie, S. P., & Grace, A. P. (2020). **Examining physiological and self-report indicators of empathy during learners' interaction with a queer history app**. *British Journal of Educational Technology*, *51*(6), 1920-1937. https://doi.org/10.1111/bjet.13019
Mobile apps take advantage of the ubiquity of mobile phones and can be used to share unique pedagogical experiences with multimedia content not yet available in curriculums. This preliminary study used a quasi-experimental pretest-posttest design to examine changes in self-reported empathy toward sexual orientation and gender identity (SOGI) minority people. We also report on the associations between gender and a physiological measure of emotional activation, skin conductance level (SCL), on self-reported empathy. The main results of this study that examined 57 undergraduate students at a Canadian University whom interacted with a queer history app individually were the following: Preliminary evidence that (1) students' empathy toward SO and GI minorities can be measured using a modified version of the Scale of Ethnocultural Empathy (SEE). (2) Statistically significant increases in empathy toward SO and GI minorities pre to post app interaction. (3) Students' pre- and post-empathy levels were statistically significantly higher toward SO than GI minorities. (4) Female students had statistically significantly higher self-reported empathy toward SO and GI minorities than males. (5) Male students had statistically significantly higher SCL than females. (6) Statistically significant interaction between SCL grouping and questionnaire administration on GI minority empathy. Findings and implications are discussed in lieu of the contributions that mobile apps can play to support social change, in particular, by fostering empathy.

He, J. (2020). **Construction of "three-stage asynchronous" instructional mode of blended flipped classroom based on Mobile learning platform**. *Education and Information Technologies*, *25*(6), 4915-4936. https://doi.org/10.1007/s10639-020-10200-9
Based on the elaboration of online learning, blended teaching and differences between the flipped classroom teaching and blended teaching, this paper addresses the fundamental principles that should be observed in the design of blended flipped classroom, and constructs a "three-stage asynchronous" teaching mode of online autonomous and collaborative learning before class, offline presentation and performance in class, and online consolidation and improvement after class. On this basis, a mixed research method of qualitative, quantitative and tracking observation to verify the effectiveness of this teaching mode is utilized. Findings showed that it contributes to improving academic performances of learners, developing their autonomy, strengthening their consciousness of collaborative inquiry, initiating their enthusiasm for learning, improving their classroom engagement, disciplining their attendance and enhancing their self-efficacy.

Hj. Ebil, S., Salleh, S. M., & Shahrill, M. (2020). **The use of E-portfolio for self-reflection to promote learning: a case of TVET students**. *Education and Information Technologies*, *25*(6), 5797-5814. https://doi.org/10.1007/s10639-020-10248-7
The power of reflection is highly acknowledged to promote learning and develop expertise, yet reflective skills are rarely explicitly taught in schools. As a result, encouraging reflection among learners is often difficult to accomplish, especially in the Technical and Vocational Education and Training (TVET) setting. By employing the Technological Pedagogical Content Knowledge (TPACK) construct, this research investigated the use of structured reflection through digital learning portfolios (e-portfolio) and explores its relation to students' learning. Using mixed methods design, this study examined a group of students from one of the TVET institutions in Brunei over an eight-week period as they practiced reflection through e-portfolio designed to guide the students to reflect upon their own learning. The students' e-portfolio notes were converted to Students' Reflective Scores (SRS) as a measure of level of reflection. The data gathered revealed that although student performance can have a moderate effect on students' level of reflection, building structured opportunities to reflect and integrate learning can develop students' ability to reflect better. The quality of students' reflection had significantly increased throughout the study period as more students exhibited higher-order thinking in their e-portfolio. Meanwhile, the key themes emerging from the semi-structured interview data revealed that while students see reflection in detached ways, the intervention had provided the opportunity for students to enhance both their cognitive and metacognitive skills. The students' responses also implied that operational feasibility of e-portfolio for Brunei TVET might depend on teachers' input, students' motivation, type of e-portfolio software chosen, and connectivity setting.

Hsia, L.-H., & Hwang, G.-J. (2020). **From reflective thinking to learning engagement awareness: A reflective thinking promoting approach to improve students' dance performance, self-efficacy and task load in flipped learning**. *British Journal of Educational Technology*, *51*(6), 2461-2477. https://doi.org/10.1111/bjet.12911
In traditional dance teaching, teachers' demonstration generally takes up most of the in-class time, which reduces the opportunities for students to practice. Therefore, researchers have started to adopt flipped learning to increase the in-class time for students' practice and teachers' guidance. However, there are some problems

associated with the conventional approach to flipped learning; these problems include students' lack of preparation before class which affects their engagement in the in-class activity; lack of guidance when self-learning; no instant assistance when encountering problems; and lack of reflection. To address these problems, the current study proposes a reflective thinking promoting approach to instruct the students to understand the pre-class materials and to strengthen their reflection and the interflow among peers in flipped learning. A total of 129 university students were recruited in the present study. They were divided into the experimental group which adopted the annotation, reflection, questioning and interflow (ARQI) approach and the control group which adopted the previous flipped learning approach. The results revealed that ARQI could significantly enhance the students' dance performance. The interview also revealed that ARQI promoted the students' reflection. Moreover, the higher self-efficacy students tended to gain more benefits from the flipped learning approach than those with lower self-efficacy. Lastly, following the ARQI steps to finish the pre-class learning, students were aware that they were required to put more mental and temporal efforts into the class.

Hussain, I., Cakir, O., & Ozdemir, B. (2020). **Studying internet addiction profile of university students with latent class analysis**. *Education and Information Technologies*, *25*(6), 4937-4959. https://doi.org/10.1007/s10639-020-10203-6
This study determined the internet addiction profiles of university students with latent class analysis based on their responses to Internet Addiction Test (IAT). The study group consisted of 480 university students. The participants were classified into four groups according to their total score: "normal (0-30), mild (31-49), moderate (50-79) and severe (80 and above)" level of internet addiction, respectively (Young 2010). The performance of latent classes across six factors of IAT found substantial difference among three latent classes for salience, excessive use, neglect of work and anticipation factors. Amongst these, the mean score of highest latent class (LC3) was around 60 while it was 50 and 40 for latent class 2 (LC2) and latent class 1 (LC1), respectively, in which distinction between latent classes were obvious. However, discrepancy between higher two classes (LC2 and LC3) with respect to the factors of "lack of control and the neglect of social life" were negligible low indicating the existence of only two significant classes (LC1 and LC2) for these two factors. These results suggest that the same clustering criterion cannot be applied to each factor of IAT and using same criterion for each factor might lead to inaccurate and biased classification of individuals.

Indriasari, T. D., Luxton-Reilly, A., & Denny, P. (2020). **Gamification of student peer review in education: A systematic literature review**. *Education and Information Technologies*, *25*(6), 5205-5234. https://doi.org/10.1007/s10639-020-10228-x
We present the first systematic review of the use of gamification in educational peer review activities. The goal of this work is to understand how gamification has been used to engage students in peer review activities and to summarize the empirical evidence for its effectiveness. Our main contribution is the presentation of a general model of the peer review process that captures the students' activities and an examination of the specific actions within this model that have been gamified in the current literature. We also summarize the commonly used game mechanics and the context and year level of courses in which prior research has been conducted, along with the reported effects on student behavior. We find that artifact assessment and artifact creation are the two most commonly gamified actions with respect to our peer review model and that the quantity and quality of both the artifacts and the generated feedback are the most popular

reward criteria. In addition, Science, Technology, Engineering and Mathematics (STEM) are the discipline areas in which gamified peer review activities are most often reported. In general, while the existing peer review literature reports mostly positive effects of gamification on student engagement, the range of student actions which have been incentivized remains narrow. Key activities, such as student reflection on the feedback received, have been largely unexplored with respect to gamification and thus present useful avenues for future work.

Ismaili, J. (2020). **Evaluation of information and communication technology in education programs for middle and high schools: GENIE program as a case study**. *Education and Information Technologies*, *25*(6), 5067-5086. https://doi.org/10.1007/s10639-020-10224-1
The Generalization of Information and Communication Technologies in Education program (GENIE) has made way for computers, video projectors, interactive whiteboards and multimedia rooms into many public schools in Morocco, and has worked to add the communicative dimension to the process of technology-assisted teaching. The program also worked on qualifying human resources to be more responsive within the new Information and Communication Technology (ICT) enriched environment by means of occasional workshops and Massive Open Online Courses (MOOCS). Still, in the absence of return on investment (ROI) studies or impact evaluations, the program stirred long controversy over its merits. This paper aims to study the impact of GENIE on teachers and students in middle and high school using an evaluation model conceived by Daniel Kirkpatrick and Thomas Guskey. The process of data mining and analysis took advantage of both quantitative and qualitative approaches, with more emphasis on the second. The study concludes that the flagship ICT integration program in the country is a promising one; however, it falls short of delivering its promise of engaging the Moroccan school into the information society. The program's 4 axes of operation (infrastructure, training, digital resources and development of use) endure serious impediments that disturb the attainment of the program's objectives throughout all GENIE's three phases of execution and will certainly hinder the realization of the ministry's 2030 vision.

Jarraud, F. (2020a, novembre 4). **Exclusif : Les enseignants parlent du numérique**. Consulté 4 novembre 2020, à l'adresse Le café pédagogique website: http://www.cafepedagogique.net/lexpresso/Pages/2020/11/04112020Article637400703289741848.aspx?actId=ebwp0YMB8s1_OGEGSsDRkNUcvuQDVN7aFZ1E4yS5hsZMczVe0oRbhmAPNiXrAmaf&actCampaignType=CAMPAIGN_MAIL&actSource=505428
Alors que JM Blanquer ouvre, devant un public d'experts et d'officiels, les Etats généraux du numérique, la Fsu fait entendre les voix du terrain. Un sondage auprès de près de 4000 personnes fait connaitre les attentes des enseignants et personnels de l'éducation nationale. Si le numérique a largement pénétré les pratiques des enseignants, ils alertent sur le manque d'équipement, la qualité médiocre des outils institutionnels et l'impact du numérique sur leur vie. Si le numérique a amené des progrès il a aussi des effets négatifs sur la vie privée, la charge de travail et la transformation du métier. Le numérique n'améliore pas non plus les relations avec les élèves et les parents. Autant de thèmes qui s'invitent grâce à ce sondage de la Fsu dans le débat des Etats généraux.

Jarraud, F. (2020b, novembre 12). **Comment se préparer à l'intelligence artificielle en éducation ?** Consulté 13 novembre 2020, à l'adresse Le café pédagogique website: http://www.cafepedagogique.net/lexpresso/Pages/2020/11/12112020Article637407631

481984003.aspx?actId=ebwp0YMB8s1_OGEGSsDRkNUcvuQDVN7aFZ1E4yS5hsZMczVe0oRbhmAPNiXrAmaf&actCampaignType=CAMPAIGN_MAIL&actSource=505611
« Il faut éduquer à l'intelligence artificielle tout autant qu'avec l'intelligence artificielle (IA) ». Le Conseil supérieur de l'éducation du Québec, un organe officiel qui conseille le gouvernement sur les questions d'éducation, publie une étude sur l'intelligence artificielle en éducation. Si le CSE pense que l'IA peut apporter un soutien à l'éducation, il met surtout en avant les précautions éthiques à imposer pour que l'entrée de l'IA se fasse au bénéfice de tous.

Järvelä, S., Gašević, D., Seppänen, T., Pechenizkiy, M., & Kirschner, P. A. (2020). **Bridging learning sciences, machine learning and affective computing for understanding cognition and affect in collaborative learning**. *British Journal of Educational Technology*, *51*(6), 2391-2406. https://doi.org/10.1111/bjet.12917
Collaborative learning (CL) can be a powerful method for sharing understanding between learners. To this end, strategic regulation of processes, such as cognition and affect (including metacognition, emotion and motivation) is key. Decades of research on self-regulated learning has advanced our understanding about the need for and complexity of those mediating processes in learning. Recent research has shown that it is not only the individual's but also the group's shared processes that matter and, thus, that regulation at the group level is critical for learning success. A problem here is that the "shared" processes in CL are invisible, which makes it almost impossible for researchers to study and understand them, for learners to recognize them and for teachers to support them. Traditionally, research has not been able to make these processes visible nor has it been able to collect data about them. With the aid of advanced technologies, signal processing and machine learning, we are on the verge of "seeing" these complex phenomena and understanding how they interact. We posit that technological solutions and digital tools available today and in the future will help advance the theory underlying the cognitive, metacognitive, emotional and social components of individual, peer and group learning when seen through a multidisciplinary lens. The aim of this paper is to discuss and demonstrate how multidisciplinary collaboration among the learning sciences, affective computing and machine learning is applied for understanding and facilitating CL.

Jong, M. S.-Y., Tsai, C.-C., Xie, H., & Wong, F. K.-K. (2020). **Integrating interactive learner-immersed video-based virtual reality into learning and teaching of physical geography**. *British Journal of Educational Technology*, *51*(6), 2063-2078. https://doi.org/10.1111/bjet.12947
Immersive virtual reality (IVR) is regarded as one of the contemporary technological innovations with rich educational potential. As a subset of IVR, spherical video-based IVR (SV-IVR) immerses users centrally in a human-recorded real-world environment, allowing them to explore the environment in any directions via mobile phones and cardboard goggles. We have proposed a pedagogical framework—Learner-Immersed Virtual Interactive Expedition (LIVIE), which leverages SV-IVR to integrate immersive and interactive virtual inquiry-based fieldwork into learning and teaching of physical geography. Besides discussing the design of LIVIE, this paper reports on the quasi-experimental study that we carried out to evaluate its pedagogical effectiveness. The research subjects were 566 students from upper, middle and lower academic-category secondary schools in Hong Kong. The study showed that LIVIE had different degrees of positive effects on the high, moderate and low academic-achieving subjects. Our work

not only provides evidence for supporting wider adoption of LIVIE in geography education, but it also sheds light on how to design and implement the pedagogical use of SV-IVR in school education.

Kang, Y., & Lee, K. (2020). **Designing technology entrepreneurship education using computational thinking**. *Education and Information Technologies*, *25*(6), 5357-5377. https://doi.org/10.1007/s10639-020-10231-2
While Computational thinking (CT) has been adopted in various educational settings, it has not been fully utilized in entrepreneurship education. In particular, technology entrepreneurship education involves project-based learning for creating business value. To help students improve learning outcomes, we propose a new framework of entrepreneurship education that combines business model development and CT. We applied this framework to a capstone course for social innovation, in which undergraduate students were asked to define a social problem, develop a solution, and finally implement the appropriate products and services using Arduino, Raspberry Pi, sensors, and actuators. To evaluate the students' learning outcomes, we conducted a survey and an interview after the course had finished. The results demonstrate that the students acquired various skills, including technical and implementation skills, and that their awareness of the broad applicability of computing increased. It was also determined that students' self-efficacy in terms of their software development abilities increased as a result of the course. We discuss the benefits of the various strategies used in the design and implementation of the course and issues that need to be discussed further. Finally, we provide guidelines for designing and implementing CT-based project courses.

Kapuza, A., Koponen, I. T., & Tyumeneva, Y. (2020). **The network approach to assess the structure of knowledge: Storage, distribution and retrieval as three measures in analysing concept maps**. *British Journal of Educational Technology*, *51*(6), 2573-2590. https://doi.org/10.1111/bjet.12938
We present three new standardised network concept map (CM) measures that can provide unique information about learning-related progress, which cannot be determined from previously known measures. Grounded in cognitive development theory on the one hand, and network theory on the other hand, our measures reveal how knowledge is stored, distributed and retrieved. We validated the new measures by testing their ability to discriminate between CMs of respondents with different levels of competency in statistics (students before and after taking an introductory statistics course and experts in the field of statistics). We also validated our measures against the most commonly used traditional and network measures. Based on a small sample of respondents, we show that two of the newly proposed compound measures reveal significant differences between experts and novices in the field, with higher values for experts, showing that expert knowledge is better distributed, more connected and balanced. More importantly, our measures were sensitive enough to show learning-related progress for students, albeit statistically non-significant, while common indicators from network theory did not demonstrate these small shifts. The validity of our new measures can be inferred from the consistency of the results from different sets of measures.

Kartal, G., & Kıcı, D. (2020). **Reflection through drama and concept maps for preservice teacher education in information communication technologies**. *Education and Information Technologies*, *25*(6), 4861-4881. https://doi.org/10.1007/s10639-020-10194-4
Preservice teaching is one of the most difficult times in the course of becoming a teacher. Preservice teachers are expected to develop not only their teaching skills but also gain a teacher's perspective and a solid understanding of what teaching entails. However, they have few opportunities to do so in actual classrooms, and teacher education programs hardly provide the transition from theory to practice. This study presents the results of technology-integrated implementation of a model of preservice teacher education based on drama and reflection. The purpose was to help the participants build on their emerging concepts of teaching and being a teacher, as detected though repetitive use of concept maps, and reflection on their maps. The changes over time in the type and frequency of the concepts used by the participants showed that they became increasingly aligned with a more egalitarian, student centered, and constructive view of teaching. The role of the teacher evolved from more of an implementer to a designer and learner, with a growing amount of teacher knowledge and knowhow. There was a twofold increase in the number of participants who intended to teach when they graduated.

Ke, F., & Xu, X. (2020). **Virtual reality simulation-based learning of teaching with alternative perspectives taking**. *British Journal of Educational Technology*, *51*(6), 2544-2557. https://doi.org/10.1111/bjet.12936
This study examined participatory simulation-based learning of teaching in a virtual reality (VR) supported learning environment and its affordance for alternative perspectives taking. This VR-supported, embodiment-integrated learning environment is designed to enable collaborative and contextualized microteaching practicing by university teaching assistants. A total of 42 chemistry teaching assistants participated in a 3-hour teaching training session, during which they were randomly assigned to a VR-supported simulation group and a live simulation group. The study found teaching knowledge development for all participants after simulation-based training. The live simulation participants better performed in the post-session knowledge test than the VR simulation participants. Qualitative data indicated a multitude of challenges and opportunities in VR simulation-based learning, including a concurrent, yet, inequivalent experience of the "diving-in" and "stepping-out" learning perspectives during virtual collaborative role-playing in a hybrid learning space.

Keane, T., Boden, M., Chalmers, C., & Williams, M. (2020). **Effective principal leadership influencing technology innovation in the classroom**. *Education and Information Technologies*, *25*(6), 5321-5338. https://doi.org/10.1007/s10639-020-10217-0
This paper reports on the implementation of a humanoid robot in five school settings and evaluates the success of the implementation based on the leadership of the school principal. As part of a wider three-year multiple case study research study that investigated the use of humanoid robots in different school settings, a robot was placed in the five selected schools for a fixed period of time to see how the technology was used and how the principal's leadership impacted on the implementation in the classroom. Multiple case study design approach allowed for exploration of the use of humanoid robots in each setting as well as a comparison between the settings. Teachers planned lessons incorporating the unfamiliar technology and used the humanoid robot as a tool to make their classes more engaging, relevant, and authentic for their students. The

findings of this study highlight that principals who were invested in the implementation of the humanoid robot in the classroom, fostered a positive learning community, and were directly supporting and encouraging of their teachers; led their team to a successful implementation of the new technology in their school.

Kerimbayev, N., Beisov, N., Kovtun, A., Nurym, N., & Akramova, A. (2020). **Robotics in the international educational space: Integration and the experience**. *Education and Information Technologies*, *25*(6), 5835-5851. https://doi.org/10.1007/s10639-020-10257-6
Nowadays robotics is one of promising avenues in the sphere of emerging technologies. In the teaching/learning environment we deal with educational robotics, which is a mixture of theory and practice, knowledge of computer technology, Mathematics and Physics. The two vectors are combined in educational robotics: the educational vector and the technological vector. As an academic discipline and an area of practical application, Robotics means a very broad spectrum of modern knowledge of diverse academic engineering specialties (fields of expertise). That means that Robotics is interdisciplinary in nature. The work provides an overview of the research aimed at studying Robot – Man interaction. Besides, the work considers some promising international cooperation between children from around the world on the development of robotics, and the experience and benefits gained from such cooperation. As an example of the international cooperation in the sphere of Robotics, the two countries, Russia and Kazakhstan, are considered. The article gives an example of the international cooperation of some educational centers, describes the experience of the work on robotics with children of various ages, and the cooperation of various schools working in this field in Kazakhstan and Russia. The working experience in the sphere of social robotics aimed at helping people has become a priority for the children from the interdisciplinary teams from Russia and Kazakhstan. Interaction and cooperation in the sphere of robotics was also used for introducing unconventional curricula, which included courses on robotic technologies as tools for considering social aspects of robotics and artificial intelligence.

Khechine, H., Raymond, B., & Augier, M. (2020). **The adoption of a social learning system: Intrinsic value in the UTAUT model**. *British Journal of Educational Technology*, *51*(6), 2306-2325. https://doi.org/10.1111/bjet.12905
The purpose of this study is to identify the determinants of the intention to use and the effective use of a learning management system that integrates social learning tools. Data were collected through an online questionnaire and analyzed using structural equation modeling techniques. As our theoretical lens, we adapted the original unified theory of acceptance and the use of technology model by extending it with intrinsic value construct. As such, this research allowed for the first time testing an extended version of the unified theory of acceptance and the use of technology model in a social learning context. Our results show that facilitating conditions and intrinsic value variables explained the behavioral intention to use a learning management system that integrates social media technology and that facilitating conditions variable predicted use behavior. Our research findings suggest fostering both students' enjoyment and interest in using social learning technologies for education and offering them facilitating conditions to strengthen technology adoption. Practitioner Notes What is already known about this topic Universities know that students are accustomed to use social media for personal purposes. Teachers are trying to integrate social media tools into learning management systems. There is little knowledge about what makes students' willing to use

social media tools for learning. The unified theory of acceptance and use of technology is an approved model that explains the intention to use and the effective use of technology. What this paper adds The paper identifies the determinants that make students' willing to use a learning management system in which a social media tool is embedded. Apart from the main determinants of the unified theory of acceptance and the use of technology model, intrinsic value—defined as the feeling of both enjoyment and interest from performing an activity—explains behavioral intention and use behavior toward social media systems. Implications for practice and/or policy The paper concludes with advices for decision makers in universities who want to integrate social learning tools in learning management systems: They have to pay attention to not only the social media system's functionalities, but also to how the system can be enjoyable and interesting to use. They have to think about offering better facilitating conditions to students—like user manuals, an online FAQ, discussion forums, training sessions, or personal human support—to strengthen the adoption of social learning systems.

Kim, K. G., Oertel, C., Dobricki, M., Olsen, J. K., Coppi, A. E., Cattaneo, A., & Dillenbourg, P. (2020). **Using immersive virtual reality to support designing skills in vocational education**. *British Journal of Educational Technology*, *51*(6), 2199-2213. https://doi.org/10.1111/bjet.13026
Immersive virtual reality (IVR) offers possibilities of creating a learner-centric environment that can provide more presence and engagement for students leading to an enhanced learning experience compared to conventional classroom practices. However, the potential of IVR in vocational education and training (VET) has not yet been explored in-depth, and it is an open question of whether it can effectively support learner creation in a designing task. In this paper, we present an IVR application developed to support gardener apprentices in designing gardens. Using this application, we conducted an experimental study with gardener apprentices to investigate the effect of the IVR interface compared to paper sketching and learner behavior on the proportion, composition, and creativity of the design outcome. Additionally, we investigated how it can be combined with a paper sketching activity to improve its effectiveness. Our analysis shows that the IVR interface can be more effective for the proportion aspect, but this may be limited to students that are able to use it after working with paper. In terms of the combination order, the effectiveness of IVR on the design quality was improved when it was carried out after the paper sketching and this ordering produced a more effective outcome for the proportion and composition aspects. Finally, our results show that IVR design quality is related to learner behaviors such as the time spent on designing and the number of simulations used. This study demonstrates the effectiveness of IVR applications in supporting designing skills and how effectiveness can be improved by combining it with a conventional method of practice.

Klingenberg, S., Jørgensen, M. L. M., Dandanell, G., Skriver, K., Mottelson, A., & Makransky, G. (2020). **Investigating the effect of teaching as a generative learning strategy when learning through desktop and immersive VR: A media and methods experiment**. *British Journal of Educational Technology*, *51*(6), 2115-2138. https://doi.org/10.1111/bjet.13029
Immersive virtual reality (IVR) simulations for education have been found to increase affective outcomes compared to traditional media, but the effects on learning are mixed. As reflection has previously shown to enhance learning in traditional media, we investigated the efficacy of appropriate reflection exercises for IVR. In a 2 × 2 mixed-methods experiment, 89 (61 female) undergraduate biochemistry students learned

about the electron transport chain through desktop virtual reality (DVR) and IVR (media conditions). Approximately, half of each group engaged in a subsequent generative learning strategy (GLS) of teaching in pairs (method conditions). A significant interaction between media and methods illustrated that the GLS of teaching significantly improved transfer (d = 1.26), retention (d = 0.60) and self-efficacy (d = 0.82) when learning through IVR, but not DVR. In the second part of the study, students switched media conditions and the experiment was repeated. This time, significant main effects favoring the IVR group on the outcomes of intrinsic motivation (d = 0.16), perceived enjoyment (d = 0.94) and presence (d = 1.29) were observed, indicating that students preferred IVR after having experienced both media conditions. The results support the view that methods enable media that affect learning and that the GLS of teaching is specifically relevant for IVR.

Koh, J. H. L. (2020). **Three approaches for supporting faculty technological pedagogical content knowledge (TPACK) creation through instructional consultation**. *British Journal of Educational Technology*, *51*(6), 2529-2543. https://doi.org/10.1111/bjet.12930
Despite the widespread availability of network and technology infrastructure at higher education institutions, the pedagogical innovation envisioned from technology-enhanced learning is still not prevalent. Faculty need to develop expertise for designing and implementing technology-enhanced learning strategies that is termed as technological pedagogical content knowledge (TPACK). This study uses action research to examine how one-to-one instructional consultation for technology-enhanced learning functions as an avenue for supporting faculty's TPACK creation. Through content analysis of the consulting notes from 18 consultation sessions, the study found that faculty can be supported to create TPACK through the consultation approaches of technology modelling, pedagogical realignment and deepening practice. These three approaches can be used during instructional consultation for faculty with varying objectives and experiences with technology-enhanced learning. The implications for faculty professional development in technology-enhanced learning are discussed. Practitioner Notes What is already known about this topic: Studies of teacher professional development programmes show that TPACK creation can be fostered through technology modelling and the use of TPACK Activity Types, lesson design prompts and design rubrics. Studies of unfacilitated peer-based design teams show that teachers create TPACK by deepening their understanding of PCK and TPACK through their design conversations. Higher education studies outside of teacher education show that individual technology mentoring and consultation encourages faculty technology adoption. What this paper adds: Academic developers can use three approaches to faciltiate TPACK creation during individual consultation with faculty. These approaches are termed as technology modelling, pedagogical realignment and deepening practice. Technology modelling is suitable for faculty without extensive experience in technology-enhanced learning. By modelling technology tools and lesson exemplars, faculty develop baseline vocabulary of technological knowledge (TK) and technological pedagogical knowledge (TPK) for TPACK creation. Pedagogical realignment is suitable for faculty with some experience of technology-enhanced learning for didactic teaching. Developing their understanding of student-centered pedagogical content knowledge (PCK) provides them with pedagogical guidelines to create student-centred TPACK. Deepening practice is suitable for faculty who are already implementing models of technology-enhanced learning. Engaging them in reflective discussions helps them to develop TK, TPK, PCK, technological content

knowledge (TCK), pedagogical knowledge (PK) and TPACK to improve different aspects in their current model of practice. Implications for practice and/or policy: Faculty can be at different implementation stages of technology-enhanced learning and a one-size-fits-all approach does not adequately address their development needs. Higher education technology mentoring programmes focus on technology adoption. Different kinds of faculty development strategies are needed to support faculty towards and beyond technology integration.

Kraft, M. A., & Hill, H. C. (2020). **Developing Ambitious Mathematics Instruction Through Web-Based Coaching: A Randomized Field Trial**. *American Educational Research Journal*, *57*(6), 2378-2414. https://doi.org/10.3102/0002831220916840
This article describes and evaluates a web-based coaching program designed to support teachers in implementing Common Core–aligned math instruction. Web-based coaching programs can be operated at relatively lower costs, are scalable, and make it more feasible to pair teachers with coaches who have expertise in their content area and grade level. Results from our randomized field trial document sizable and sustained effects on both teachers' ability to analyze instruction and on their instructional practice, as measured by the Mathematical Quality of Instruction instrument and student surveys. However, these improvements in instruction did not result in corresponding increases in math test scores as measured by state standardized tests or interim assessments. We discuss several possible explanations for this pattern of results.

Kynigos, C., & Grizioti, M. (2020). **Modifying games with ChoiCo: Integrated affordances and engineered bugs for computational thinking**. *British Journal of Educational Technology*, *51*(6), 2252-2267. https://doi.org/10.1111/bjet.12898
Although there is wide rhetoric that programming should be learnt by all as an element of computational thinking (CT), in practice, it is mostly implemented narrowly as an end in itself consisting of routine practice and traditional testing of the ability to code. This paper discusses a way in which programming could be seen through a wider integrated pedagogical approach as jointly cultivating meaning making of computational concepts in conjunction with the adoption of practices and strategies in a relevant meaningful context for learners. We elaborate on a case of learning to code through digital game modding where programming and other computational concepts coexist. Our design frame includes the principles of black and white box designs, of students as de-buggers of engineered half-baked games and of games embedding both concepts and values in simulations involving wider contested complex issues. We use our analysis of the meaning making of students as they debug a choice-driven simulation game specially designed to bring this integrated kind of learning to the fore. We show elements of context-aware integrated CT connecting otherwise fragmented areas such as databases, block-based programming, Geographical Information Systems design.

Lafleur, F., & Samson, G. (Éd.). (2020). ***État de situation sur l'hybridité de la formation à distance en contexte postsecondaire***. Consulté à l'adresse https://www.puq.ca/catalogue/livres/etat-situation-sur-hybridite-formation-distance-3894.html

Lagstedt, A., Lindstedt, J. P., & Kauppinen, R. (2020). **An outcome of expert-oriented digitalization of university processes**. *Education and Information Technologies*, *25*(6), 5853-5871. https://doi.org/10.1007/s10639-020-10252-x

Digitalization challenges the way in which business processes are seen. The potential for enhancement is even recognized in business areas that traditionally have little to do with IT. Even though universities have long-standing traditions of how work is organized, they have not been eager to adopt digitalized processes. Because core university processes rely on highly skilled experts, digitalizing processes are not as straightforward as they would be in more mechanical work. We developed an expert-oriented digitalization model (EXOD) for the digitalization of university processes and tested it using a case study. After digitalizing a core process, we interviewed the experts involved. The results show the usefulness and adaptability of the model. Based on the results, we recommend further studies to refine and test the model more comprehensively. In addition, based on the adaptability of the model, we recommend it as a baseline for university process digitalization projects in general.

Lebeničnik, M., & Starčič, A. I. (2020). **Examining the contemporary digital divide of university students with specific reference to students with special educational needs**. *British Journal of Educational Technology*, *51*(6), 2422-2441. https://doi.org/10.1111/bjet.12920
The contemporary digital divide is characterised by the uneven distribution of access to information communication technology (ICT), originating in the different motivation, physical access and skills of users. We synthesised existing theories and frameworks to develop and then empirically validate a theoretical model to predict university students' use of online learning resources (OLRs) at the crossroads of formal and informal learning. Because access to digital content may be a bigger issue for students with special educational needs (SEN), we also examined OLR use among this group. Fifty-six students with SEN and 1642 mainstream students participated in the survey. Our main conclusions are as follows. In the whole sample, personal socio-cognitive factors (beliefs, self-efficacy) are the only significant predictors of OLR use. The results suggest that motivational and skills-related differences between students contribute more to the digital divide than do either differences related to unpleasant environmental conditions (eg, inaccessibility, high prices, etc.) or personal context (eg, study-fit, learning preferences, etc.). Separate regressions show that beliefs were significant predictors for both SEN students and their peers, while self-efficacy was a significant predictor for the mainstream students only. Measuring unpleasant environmental factors as a continuum (environmental and contextual barriers) explained OLRs better than solely differentiating between SEN and mainstream students.

Lemay, D. J., & Doleck, T. (2020). **Constructivist educational technology: Re-examining the foundations and state of the literature**. *British Journal of Educational Technology*, *51*(6), 1905-1906. https://doi.org/10.1111/bjet.13042
With this special section, we hope to draw attention to educational technology designed for expanding human capability, that is, educational technology for accelerating and enabling our range of knowledge and agency. The four contributions to our special issue include the development of a location-based history teaching app, a STEM inquiry platform, using Knowledge Forum for teaching self-reflective practice to pre-service teachers using as well as a review of computer-supported collaborative learning. These special section articles show the promise of constructivist educational technology for expanding horizons.

Li, R.-Y., & Wang, C.-H. (2020). **Key factors and network model for location-based cultural mobile game design**. *British Journal of Educational Technology*, *51*(6), 2495-2512. https://doi.org/10.1111/bjet.12926
The use of smart devices as media for digital learning constitutes a new-generation digital learning paradigm. Therefore, context-aware game-based learning has attracted considerable attention. Location-based games have not only positive effects on learning but also pronounced effects on culture and history. Accordingly, focusing on railway cultural heritages, we attempted to assess interdependent relationships between key factors crucial for the design of a location-based mobile game for cultural heritages. We adopted the analytic network process (ANP) for our assessment. We initially performed a literature review to generalize relevant criteria and elements and developed a questionnaire based on the fuzzy delphi method (FDM); which lead to the selection of key factors, namely 3 criteria and 15 elements. We also applied an online ANP-based questionnaire; on the basis of the experts' opinions, we established a network model and determined the priority order of the key factors. The results revealed that experts considered "culture learning" to be of the highest importance, with the most important three elements being "prior knowledge," "challenge levels," and "cultural narrative." Moreover, culture learning exhibited a strong interaction with content design. In addition, each element had a considerable influence on the remaining elements that could provide references for the construction of location-based cultural mobile games in the future.

Liu, R., Wang, L., Lei, J., Wang, Q., & Ren, Y. (2020). **Effects of an immersive virtual reality-based classroom on students' learning performance in science lessons**. *British Journal of Educational Technology*, *51*(6), 2034-2049. https://doi.org/10.1111/bjet.13028
The increased availability and development of immersive technologies have given students growing opportunities to engage in different educational subjects. However, there is a lack of empirical research exploring the educational influence of using Immersive Virtual Reality (IVR) in science classrooms. To address this gap, this study developed a series of IVR-based science lessons for middle-school students and further examined these lessons' effects on learning performance. Our quasi-experimental approach employed a pretest and posttest to measure academic achievement and questionnaires to measure engagement and technology acceptance. A total of 90 sixth-grade students from two classes were randomly assigned to the experimental and control groups. The experimental group engaged with the science lessons using Head-Mounted Displays, whereas the control group learned the same material through traditional teaching methods. The results revealed that the experimental group obtained significantly higher academic achievement and engagement scores (cognitive, behavioral, emotional and social) than the control group. Moreover, the experimental group had a high level of technology acceptance for IVR usage in classrooms. Our study provides empirical evidence for IVR's use in science education. Furthermore, it also sheds light on how to develop and implement an IVR-based classroom for formal educational purposes.

López, C. I., Bautista, L. E., & Mantilla, C. (2020). **A novel approach to learning virtual engineering in the medical devices process**. *Education and Information Technologies*, *25*(6), 5703-5729. https://doi.org/10.1007/s10639-020-10236-x
Currently, the use of computer-based technologies has increased to support the design process of biomedical products. However, the limited capacity of undergraduates to

work with the technologies used in the development process negatively influences the research execution for biomedical product design. For this reason, we design a framework for knowledge transfer required by undergraduate students. The study aim was to evaluate the framework proposed as a strategy for knowledge transfer and ICT skills strengthening. The framework presented, manage teaching and learning process of software tools used during the ideation and development of biomedical products. The framework is oriented to undergraduates' students in the research group, working in their final degree project. An evaluation tool was designed and applied with four undergraduate cohorts. The students' perception of learning process satisfaction, complexity, difficulty, and usefulness of software applications was evaluated. The software applications evaluated were used in Reverse Engineering, Computer-Aided Design, Computer-Aided Engineering, and Additive Manufacturing. The results show: the role of stakeholders involved in the training process, perceived differences of teaching and learning strategy, and the value of technical support. Likewise, the empowerment and the affinity degree in developing biomedical products was evidenced.

Ludvigsen, K., Krumsvik, R. J., & Breivik, J. (2020). **Behind the scenes: Unpacking student discussion and critical reflection in lectures**. *British Journal of Educational Technology*, *51*(6), 2478-2494. https://doi.org/10.1111/bjet.12922
This study investigated the characteristics of peer discussions used to support formative assessment in lectures, facilitated by a student response system, in an undergraduate qualitative methods course for psychology students. The intent was to examine the characteristics of peer discussions in which student response systems are used to facilitate the practice of formative assessment lectures. The research was guided by the following research questions: (1) What patterns of talk can be identified in the discussions? (2) How do the students use subject-specific vocabulary in the discussions? (3) How the students' understanding of the subject matter displayed in these discussions? To examine the characteristics of peer interactions, 87 student discussions were recorded and analysed. The concept of exploratory talk was used as a lens to examine the discussions. In 68 of the 87 discussions, the students exchanged ideas and elaborated on their peers' ideas and understanding of the concepts. In the remaining 25 discussions, the process of reasoning was less visible. The findings are relevant for teaching designs that aims to use digital tools to facilitate formative assessment.

Lui, M., McEwen, R., & Mullally, M. (2020). **Immersive virtual reality for supporting complex scientific knowledge: Augmenting our understanding with physiological monitoring**. *British Journal of Educational Technology*, *51*(6), 2180-2198. https://doi.org/10.1111/bjet.13022
Educators are recognizing the potential power of immersive virtual reality (IVR) to allow learners to experience previously intangible firsthand phenomena, such as atoms and molecules. In this study, an IVR simulation of a complex gene regulation system was co-designed with an undergraduate microbiology course instructor. The course, with 234 students, was taught using active learning strategies, including peer instruction and exposure to a two-dimensional computer simulation. Thirty-four students from the course participated in an interactive IVR experience using head-mounted displays. We assess students' conceptual understanding using tests, multimodal data collected during the IVR sessions (including video analysis in combination with physiological sensor data and eye-tracking data) as well as semi-structured interviews. We found that students who were seated while in IVR demonstrated significantly higher conceptual understanding of

gene regulation at the end of the course and higher overall course outcomes, as compared to students who experienced the course as originally designed (control). However, students who experienced IVR in a standing position performed similarly to the control group. In addition, learning gain appears to be influenced by a combination of prior knowledge and how IVR is experienced (ie, sitting vs. standing). Learning implications for the connections between sensorimotor systems and cognition in IVR are discussed.

Lund, B. D. (2020). **Do "interdisciplinary" disciplines have an interdisciplinary impact?: Examining citations between educational technology and library and information science journals**. *Education and Information Technologies*, *25*(6), 5103-5116. https://doi.org/10.1007/s10639-020-10223-2
This study examines the exchange of citations between two disciplines – Educational Technology (ET) and Library and Information Science (LIS) – as an indication of their interdisciplinary impact. The study was conducted in three phases. The first phase consists of an analysis of citations from ET journals to 15 top LIS journals; the second phase examined citations from LIS journals to 15 top ET journals; the third phase studied the five LIS journals – not on the original list of 15 – to cite ET journals and the relationship of citations from ET journals to them. The findings of this study reveal that about 1/10 LIS articles and 1/30 ET articles in the study sample were cited at least once in an article from the other discipline. This suggests that LIS has slightly stronger impact on ET research than vice versa. Among specific journals, the Journal of Education for Library and Information Science and the Journal of Documentation in LIS and Educational Technology Research and Development and the Journal of Educational Technology and Society in ET were most cited in the other discipline. Overall, the findings indicate a fair amount of exchange of ideas between the disciplines of LIS and ET. These findings are significant for interdisciplinary researchers in both ET and LIS as an indication of the links between and impact of these disciplines.

Makransky, G., Petersen, G. B., & Klingenberg, S. (2020). **Can an immersive virtual reality simulation increase students' interest and career aspirations in science?** *British Journal of Educational Technology*, *51*(6), 2079-2097. https://doi.org/10.1111/bjet.12954
Science-related competencies are demanded in many fields, but attracting more students to scientific educations remains a challenge. This paper uses two studies to investigate the value of using Immersive Virtual Reality (IVR) laboratory simulations in science education. In Study 1, 99 (52 male, 47 female) seventh (49) and eighth (50) grade students between 13 and 16 years of age used an IVR laboratory safety simulation with a pre- to posttest design. Results indicated an overall increase in interest in science and self-efficacy, but only females reported an increase in science career aspirations. Study 2 was conducted with 131 (47 male, 84 female) second (77) and third (54) year high school students aged 17 to 20 and used an experimental design to compare the value of using an IVR simulation or a video of the simulation on the topic of DNA-analysis. The IVR group reported significantly higher gains from pre- to posttest on interest, and social-outcome expectations than the video group. Furthermore, both groups had significant gains in self-efficacy and physical outcome expectations, but the increase in career aspirations and self-outcome expectations did not reach statistical significance. Thus, results from the two studies suggest that appropriately developed and implemented IVR simulations can address some of the challenges currently facing science education.

Martins, A. S. R., Quintana, A. C., & de Gomes, D. G. (2020). **Factors enabling the acceptance and use of a podcast aggregator in accounting education**. *Education and Information Technologies*, *25*(6), 5427-5449. https://doi.org/10.1007/s10639-020-10232-1
The aims of the current study are to identify the behavioral factors enabling students' acceptance and use of a podcast aggregator that provides tips about contents taught in the classroom, as well as to investigate its impact on knowledge formation among Accounting Sciences undergraduate students from a Federal University in Southern Brazil, based on the Unified Theory of Acceptance and Use of Technology (UTAUT) and on Vygotsky's Historical-Cultural Theory. Data were collected through the application of an on-site questionnaire comprising closed questions and through diagnostic evaluations based on Vygotsky's theory. The Partial Least Squares Structural Equation Modeling (PLS-SEM) conducted in the SPSS v. 017 and SmartPLS v. 2.0 software, as well as the content analysis conducted in the NVivo software, were the data analysis techniques adopted in the current study. The current research is justified by the need of conducting studies based on education theories and on theoretical frameworks associated with technology acceptance in order to help better understanding to what extent technology contributes to cognitive development. According to the current results, it was possible concluding that students' acceptance and use of the podcast aggregator in both investigated classes was motivated by aspects such as social influence and performance expectations.

Maseko, M., Zhou, T. G., & Tsokota, T. (2020). **A framework to manage reluctance to bad news reporting on software projects in state universities in Zimbabwe**. *Education and Information Technologies*, *25*(6), 5549-5564. https://doi.org/10.1007/s10639-020-10235-y
Failure of IT projects has risen to become an eyesore for most organisations. This is often attributed to the 'mum effect'- an individual's reluctance to report the exact position of troubled software projects. With the increasing digitalization of operations by most State Universities in Zimbabwe, the mum effect has the potential to rise to exponential proportions. Guided by the Design Science approach data was gathered from an intensity sample of 15 participants comprising 7 software project team members, 3 ICT project managers, and 5 users of the system drawn from three Zimbabwean state universities. The data collection was done using key informant interviews and focus group discussions. Data were analysed using thematic analysis and NVivo (version 11) software was used to store, organise, and code data transcripts. Factors suppressing Bad News Reporting were grouped into three broad categories which included organisational factors, personal factors, and situational factors. The findings suggest the need to incorporate these multi-level factors in the design and implementation of software projects if they are to be efficacious. This study recommends the establishment of clear channels of communication to manage bad news reporting and creating formal structures that function outside the traditional organisational hierarchy to convey information regarding anomalies. This study contributes to practice by providing appropriate interventions based on empirical evidence based on the centrality of software project team members' insights, experiences as well as practices.

Mastafi, M. (2020). **Rôles et impacts des TIC dans l'enseignement et l'apprentissage des mathématiques : perceptions des enseignants du secondaire**. *Formation et profession*, *28*(2), 60. https://doi.org/10.18162/fp.2020.508
The objective of the research presented in this article is to study the impact of the pedagogical use of ICT on mathematics teaching and learning in Morocco. Based on

the opinions gathered during interviews with 27 mathematics teachers who use ICT in their secondary school practices, the results highlight three main categories of impacts: improving the quality of teaching, developing students' skills in analysis, reasoning, modelling and problem solving, as well as improving academic success and finally the emotional impact of ICT on students in their learning.

McNamara, S. W. T., Wilson, K. R., & Petersen, A. (2020). **Content acquisition podcasts' impact on preservice teachers' understanding of language and disability**. *British Journal of Educational Technology*, *51*(6), 2513-2528. https://doi.org/10.1111/bjet.12927
Educators' understanding and use of language is particularly relevant in relation to historically marginalized groups, such as people with disabilities. However, previous research has suggested that teacher education programs do not adequately address the concepts of language and disability. Content acquisition podcasts (CAPs) may provide them with knowledge related to language and disability. The purposes of this investigation were to determine how a CAP impacts undergraduate students' understanding of language with regards to people with disabilities, and examine undergraduate students' perceptions towards CAPs as a learning tool. Qualitative analyses, a pairwise t-test, and a Pearson's correlation analysis were used to determine CAP's impact on 43 preservice educators. Results revealed that the CAP significantly increased the participants' knowledge and that the participants had positive perceptions towards the CAP. Findings from focus group discussions indicated a number of themes emerged in relation to both language use regarding people with disabilities and CAPs.

Měkota, T., & Marada, M. (2020). **The influence of the Nearpod application on learning social geography in a grammar school in Czecha**. *Education and Information Technologies*, *25*(6), 5167-5184. https://doi.org/10.1007/s10639-020-10214-3
Digital technologies are essential for almost all human activities, so children should learn to work with them at schools. Some studies of the effect of using computers, tablets or cell phones at schools have been carried out, but in Czechia, where the research was conducted, the number of such studies is very low. We wanted to examine how tablets help pupils of the high school with learning social geography in Czech educational system. We worked with two classes of a high school in Prague. Two lessons were taught in each class, one with the Nearpod application on the tablet, the other without it. Pupils wrote pre-tests before the lesson and post-tests after it. Interviews were conducted with some of the pupils after the lesson with the tablet. Then, we worked with the results of both classes together and with the results of each class separately. We found out that pupils enjoyed the lessons with tablet, they felt more motivated and they thought, that they had learnt more with the tablet than without it. However, statistics showed us different results: the results of post-test were better when pupils had used tablet, but this finding was not valid for one of the two classes, where the difference between tablet and non-tablet lesson was not statistically significant. There were differences in pupils' relationship to digital technologies and in level of collaboration between the classes. The level of collaboration provides a good explanation of different success of both classes.

Mercader, C. (2020). **Explanatory model of barriers to integration of digital technologies in higher education institutions**. *Education and Information Technologies*, *25*(6), 5133-5147. https://doi.org/10.1007/s10639-020-10222-3

Digital technologies are powerful resources that have not been globally integrated in higher education teaching. Previous studies have pointed out several barriers that can slow down this integration. This study, therefore, aims to elaborate an explanatory model of the barriers to digital technology integration into university teaching, including both links between them and between social and demographic factors that may be influencing them. Through a mixed method approach, a multiple case study with a sample of 527 teachers was developed in Spain. The results show that there are seven main barriers to technology integration: technophobia, lack of time, absence of planning, lack of incentives, lack of evaluation, work saturation, and university accreditation model. The model will help organizations and teachers to identify both the specific barriers and their linkages to other factors. Thus, they will be able to carry out improvements regarding the integration of digital technologies in higher education.

Millette, M., Millerand, F., Myles, D., Latzko-Toth, G., & Congrès de l'ACFAS (Éd.). (2020). ***Méthodes de recherche en contexte numérique: une orientation qualitative***. Consulté à l'adresse https://www.pum.umontreal.ca/catalogue/methodes_de_recherche_en_contexte_numerique
Ce livre fait le point sur les avancées et les enjeux de la méthodologie qualitative en contexte numérique. Il offre un panorama des méthodes de recherche les plus récentes pour l'étude des phénomènes en ligne par les sciences sociales – communication, sociologie, anthropologie. Cet ouvrage foisonnant présente des textes allant des fondements épistémologiques aux méthodes visuelles pour l'étude d'objets numériques, en passant par les stratégies ethnographiques, la collecte et l'analyse de traces d'activités en ligne. Au-delà du manuel, l'ouvrage se distingue par son actualité, sa cohérence entre la théorie et la pratique ainsi que par sa résonance interdisciplinaire.

Mohan, M. M., Upadhyaya, P., & Pillai, K. R. (2020). **Intention and barriers to use MOOCs: An investigation among the post graduate students in India**. *Education and Information Technologies*, *25*(6), 5017-5031. https://doi.org/10.1007/s10639-020-10215-2
Massive Open Online Courses (MOOCs) have widely been acknowledged as a unified platform to reduce the digital divide and make education accessible to all. It also enables students' access to professors and educational contents sans spatial and institutional barriers. Despite several benefits, MOOCs' adoption and completion rate remain unimpressive, especially among developing countries. Using Extended Unified Theory of Acceptance and Use of Technology (UTAUT2), we examine the key factors that influence the behavioral intention to use MOOCs among students in an Indian private university. The data from 412 postgraduate students were analyzed using Partial Least Squares-Structured Equation Modelling. The study identifies barriers to use MOOCs, in a university that has offered free MOOCs courses and certifications to the students. The study makes several theoretical contributions and offer adequate insights for higher education institutions to administer and integrate MOOCs in their curriculum.

Motteram, G., Dawson, S., & Al-Masri, N. (2020). **WhatsApp supported language teacher development: A case study in the Zataari refugee camp**. *Education and Information Technologies*, *25*(6), 5731-5751. https://doi.org/10.1007/s10639-020-10233-0
This paper explores the possibilities and challenges of using the social media tool WhatsApp to support language teacher development in the Zataari refugee camp in Jordan. It takes a sociocultural perspective on teacher development where WhatsApp

is a mediating tool in the broader sociocultural landscape. A thematic analysis of the postings and exchanges from the WhatsApp group revealed three main uses of the WhatsApp chat: for interpersonal interactions, for professional development, and for organisational purposes. The analysis suggests the WhatsApp group contributed to the teachers' English language knowledge, provided a platform for them to share and discuss issues related to the challenges of their particular context, enabled them to contribute to the development of some teaching materials and begin to address some of the issues they had in a meaningful way. It also raises issues of participation, access, equity and sustainability. We conclude by suggesting there is good potential for the use of social media tools such as WhatsApp for teacher development in challenging contexts, despite the contextual constraints observed and described. While this specific case involves language teachers, the general findings can potentially be applied to any teacher education or training context where access to training or education might be curtailed for a number of reasons, including the most recent changes enforced by the global COVID-19 pandemic.

Mpungose, C. B. (2020a). **Beyond limits: Lecturers' reflections on Moodle uptake in South African universities**. *Education and Information Technologies*, *25*(6), 5033-5052. https://doi.org/10.1007/s10639-020-10190-8
The mandatory phasing in of the Moodle learning environment within South African universities has met with a variety of uptake challenges. Specifically, Moodle was officially introduced without clear exposition of the underpinning theory, training, and implementation framework for its adoption. This study reports on a qualitative case study drawing from a purposive sampling of two South African universities that have adopted Moodle to support the teaching and learning endeavour. 31 lecturers who have used Moodle within their lectures were selected, drawing their responses and data through reflective activity, Moodle group discussion and one-on-one semi-structured interviews. The analysis was guided by inductive and deductive reasoning, and the study was framed by non-formal, formal, and informal e-learning frameworks. The study revealed that the top-down imposition of mandatory Moodle implementation was resisted by lecturers, hindering uptake, and maximum potential was difficult to measure. In the absence of clear policy directives, the study recommends that the lecturers go beyond the limits and develop their own means of formal, informal and non-formal reflections to gauge the merits or limitations of Moodle. The reflections were harnessed to coin the Equilateral Moodle Reflections framework in order to maximise the potential uptake and use of Moodle in higher education.

Mpungose, C. B. (2020b). **Student Teachers' Knowledge in the Era of the Fourth Industrial Revolution**. *Education and Information Technologies*, *25*(6), 5149-5165. https://doi.org/10.1007/s10639-020-10212-5
Student teachers' knowledge during teaching practice becomes the contested phenomenon in the era of the fourth industrial revolution (4IR). Inadequate knowledge negatively impacts the existing South African curriculum and assessment policy statement (CAPS) subjects, despite the attempt at introducing the new 4IR curriculum into schools. Consequently, this qualitative interpretive case study explored student teachers' knowledge in the teaching of CAPS subjects. The study purposively selected thirty-one student teachers from a South African university who were conducting teaching practice; they were also conveniently co-opted because they were fourth years, conducting teaching practice in three different schools. A technological,

pedagogical and content knowledge (TPACK) framework was used to frame the study. File observation, reflective activity, and a one-on-one semi-structured method were utilised to generate data, which was analysed using both deductive and inductive process. Credibility and dependability were used to ensure trustworthiness, while the anonymity and confidentiality of this study were maintained to ensure ethics. This paper revealed that student teachers are good at standard content, pedagogical, and technological knowledge, while having no notion of advanced knowledge that caters for 4IR. Hence, inadequate training received from the university contributes to their failings. Thus, Advanced Signal (AS)-TPACK emerged from the findings as the most useful framework for knowledge growth in education to prepare student teachers in the 4IR era.

Muhammad, J. S., Isa, A. M., Samsudin, A. Z. H., & Miah, S. J. (2020). **Critical factors for implementing effective information governance in Nigerian universities: A case study investigation**. *Education and Information Technologies*, *25*(6), 5565-5580. https://doi.org/10.1007/s10639-020-10206-3
Universities in Nigeria aim to be on global map with better international rankings. Unfortunately, they are plagued with inefficient administration and management due to poor management of records and information. Universities, most of the cases are failed to comply with the National Universities Commission, which resulted higher possibilities of revoking their licenses. The need for effective records and information management is imperative. Information Governance deals with managing records and information for providing a meaningful solution to present situation. The essence of this study is to explore the critical factors (CFs) for implementing Information Governance (IG) framework in Nigerian universities. A qualitative research using case study approach with semi-structured interview technique was used to elicit data from 11 stakeholders in records and information management regarding the research topic in the case study university. Software for qualitative research analysis ATLAS-ti 7.0 was used to aid the data analysis. The research found that CFs such as funding, stakeholder involvement, policy, enabling environment, personnel and, information and communication technologies (ICT) are vital in implementing IG for universities.

Murad, D. F., Heryadi, Y., Isa, S. M., & Budiharto, W. (2020). **Personalization of study material based on predicted final grades using multi-criteria user-collaborative filtering recommender system**. *Education and Information Technologies*, *25*(6), 5655-5668. https://doi.org/10.1007/s10639-020-10238-9
The recommender system has gained research attention from education research communities mainly due to two main reasons: increasing needs for personalized learning and big data availability in the education sector. This paper presents a hybrid user-collaborative, rule-based filtering recommendation system for education context. User profiles are represented by learning outcome scores and contextual information. The user-collaborative filtering method is used for predicting the targeted student's learning outcome of a particular course. The predicted learning outcome combined with a set of decision rules are used for recommending some relevant link of learning materials to the targeted student. The initial contextual information which is assessed during the online program entrance test makes it possible for the proposed recommneder system to give automated recommendations to new students. The proposed method was tested using student learning outcome records from BINUS Online repository data. The results of performance evaluation of both recommender system with contextual information

which achieves 458.22 MSE and the recommender system without contextual information which achieves 413.19 MSE are not significantly different. However, unlike the latter recommender system, the former recommender system has an advantage mainly that it can be used to give recommendation to the targeted students since their early program stage.

Muuli, E., Tõnisson, E., Lepp, M., Luik, P., Palts, T., Suviste, R., … Säde, M. (2020). **Using image recognition to automatically assess programming tasks with graphical output**. *Education and Information Technologies*, *25*(6), 5185-5203. https://doi.org/10.1007/s10639-020-10218-z
There are thousands of participants in different programming MOOCs (Massive Open Online Courses) which means thousands of solutions have to be assessed. As it is very time-consuming to assess that amount of solutions manually, using automated assessment is essential. Since task requirements must be strict for the solutions to be automatically gradable, it often limits the types of different assignments and creativity. In order to promote more creativity we wanted to enable programming tasks with graphical output. In order to analyze and assess the creative tasks we developed, implemented and analyzed a system capable of assessing the graphical output of a solution program using image recognition. Image recognition is used to analyze the graphical output (image) produced by the solution program. The graphical output with a keyword attached to it is sent to an image recognition service provider that responds with a probability score. The solution is accepted or rejected based on the probability of a given object appearing in the image. The system was tested and evaluated in two runs of the MOOC "Introduction to Programming." In the first run, we used the system to automatically assess the solutions of programming tasks on a predefined topic and in the second run on a topic chosen by the participant. The evaluation of the usefulness of the system and overview of participants' feedback are presented as results. Suggestions for future improvements of the system and possible research are also listed.

Natale, A. F. D., Repetto, C., Riva, G., & Villani, D. (2020). **Immersive virtual reality in K-12 and higher education: A 10-year systematic review of empirical research**. *British Journal of Educational Technology*, *51*(6), 2006-2033. https://doi.org/10.1111/bjet.13030
Immersive Virtual Reality (IVR) systems offer several learning affordances, that is, characteristics that can elicit learning behaviors promoting learning outcomes in educational contexts. In particular, the immersive and interactive properties of these systems represent a strong opportunity to support the effective learning experiences. The present review aims at mapping IVR systems' use in K-12 and higher educational contexts and investigating their effectiveness in facilitating learning in terms of knowledge attainment and retention and motivational outcomes. The synthesis of the reviewed studies (n = 18) show that IVR can support a number of activities and experiences that in turn improve learning and motivate students to fulfill educational goals by eliciting their interest and engagement with the learning materials. The main advantage of IVR seems related to the possibility for users to have first-hand experiences that would not be possible in the real world, simultaneously offering unique opportunities for experiential and situated learning, as well as promoting students' motivation and engagement. Despite the promising findings, the reviewed studies present several methodological flaws: non-randomized trials, small sample sizes, unbalanced samples and non-validated measures. This in turn makes it difficult to generalize from these results. Future research is needed to investigate the unique opportunities of IVR in education.

Ng, S. F., Azlan, M. A. K., Kamal, A. N. A., & Manion, A. (2020). **A quasi-experiment on using guided mobile learning interventions in ESL classrooms: Time use and academic performance**. *Education and Information Technologies*, *25*(6), 4699-4719. https://doi.org/10.1007/s10639-020-10191-7
This quasi-experimental study examined a guided learning approach towards the use of mobile devices and investigated the performance of language learners who were guided in the usage. A total of 419 students from two faculties were invited to participate in this 8-week intervention, 155 participants in the control group and 264 in the experimental group. In the experimental group, the researchers incorporated guided activities Module Intervention Model (MIM) using mobile devices into the ESL lessons whereas the control group lessons were without guided activities. Participants from both groups were asked to record their daily mobile device use for activities related to English language learning using an online form. These data were compared to the results of the tests conducted pre- and post-treatment. At the end of the study, students who received guided language activities utilizing the mobile devices had significantly higher levels of language performance than control group students. However, treatment group students who spent more time using mobile devices to learn the language did not display better performance compared to those who spent minimal time. This finding re-established the importance of guided activities as intervention to facilitate students' learning and points to the need for curricular modernization and faculty development in the instructional use of technology. Due to the increased need for online instruction precipitated by "social distancing and isolation' required to overcome the coronavirus pandemic, the need for faculty to acquire skills in guided use of mobile devices for school-related learning is anticipated to be greater than ever.

Niemelä, M., Kärkkäinen, T., Äyrämö, S., Ronimus, M., Richardson, U., & Lyytinen, H. (2020). **Game learning analytics for understanding reading skills in transparent writing system**. *British Journal of Educational Technology*, *51*(6), 2376-2390. https://doi.org/10.1111/bjet.12916
Serious games are designed to improve learning instead of providing only entertainment. Serious games analytics can be used for understanding and enhancing the quality of learning with serious games. One challenge in developing the computerized support for learning is that learning of skills varies between players. Appropriate algorithms are needed for analyzing the performance of individual players. This paper presents a novel clustering-based profiling method for analyzing serious games learners. GraphoLearn, a game for training connections between the speech sounds and letters, serves as the game-based learning environment. The proposed clustering method was designed to group the learners into profiles based on game log data. The obtained profiles were statistically analyzed. For instance, the results revealed one profile consisting of 136 players who had difficulties with connecting most of the target sounds and letters, whereas learners in the other profiles typically had difficulties with specific sound-letter pairs. The results suggest that this profiling method can be useful for identifying children with a risk of reading disability and the proposed approach is a promising new method for analyzing serious game log data. Practitioner Notes What is already known about this topic Serious games are used to improve learning and to tailor learning environments for people with various difficulties in learning. Learning analytics and serious games analytics are growing research fields, applying and developing data analysis methods to analyze, profile and understand learning using serious games. GraphoLearn is a learning game for

training reading skills. The game provides preventive support for learners with varying skill levels including individuals who are struggling with reading. What this paper adds The paper develops and presents a novel approach for serious games analytics to analyze GraphoLearn players. The proposed data analysis approach produces an interpretable set of error profiles, which characterize the learning difficulties in a unique way. The profiling method can be used for longitudinal studies and applied to analyzing logs of other serious games. Implications for practice and/or policy It is possible to reveal and understand profiles of serious game players. The proposed data analysis method can be used to identify players who have a potential risk for reading difficulties or disabilities. Even though the proposed method provides only limited information about players' future skills, it offers a good starting point for other studies in which players' development can be monitored more accurately.

Noroozi, O., Pijeira-Díaz, H. J., Sobocinski, M., Dindar, M., Järvelä, S., & Kirschner, P. A. (2020). **Multimodal data indicators for capturing cognitive, motivational, and emotional learning processes: A systematic literature review**. *Education and Information Technologies*, *25*(6), 5499-5547. https://doi.org/10.1007/s10639-020-10229-w
This systematic review on data modalities synthesises the research findings in terms of how to optimally use and combine such modalities when investigating cognitive, motivational, and emotional learning processes. ERIC, WoS, and ScienceDirect databases were searched with specific keywords and inclusion criteria for research on data modalities, resulting in 207 relevant publications. We provide findings in terms of target journal, country, subject, participant characteristics, educational level, foci, type of data modality, research method, type of learning, learning setting, and modalities used to study the different foci. In total, 18 data modalities were classified. For the 207 multimodal publications, 721 occurrences of modalities were observed. The most popular modality was interview followed by survey and observation. The least common modalities were heart rate variability, facial expression recognition, and screen recording. From the 207 publications, 98 focused exclusively on the cognitive aspects of learning, followed by 27 publications that only focused on motivation, while only five publications exclusively focused on emotional aspects. Only 10 publications focused on a combination of cognitive, motivational, and emotional aspects of learning. Our results plea for the increased use of objective measures, highlight the need for triangulation of objective and subjective data, and demand for more research on combining various aspects of learning. Further, rather than researching cognitive, motivational, and emotional aspects of learning separately, we encourage scholars to tap into multiple learning processes with multimodal data to derive a more comprehensive view on the phenomenon of learning.

Outhwaite, L. A., Gulliford, A., & Pitchford, N. J. (2020). **Language counts when learning mathematics with interactive apps**. *British Journal of Educational Technology*, *51*(6), 2326-2339. https://doi.org/10.1111/bjet.12912
When available in multiple languages, educational apps can deliver the same mathematics instruction in the child's first language or different language of instruction. This pilot study examined the feasibility of a maths app intervention compared to standard mathematical practice with 61 children aged 5–6 years attending a bilingual immersion school in Brazil. The apps were delivered in either the child's first (L1, Brazilian Portuguese) or second (L2, English) language, while app content, time on task, and school setting were consistent across the two treatment groups. Time on task in the

comparison group was less. After 10 weeks, results showed children made significant mathematical learning gains with the apps, for both languages of instruction, compared to standard practice: the finding is discussed in relation to the threat of time spent on task. Children using the apps in Brazilian Portuguese (L1) completed more app topics than children using the apps in English (L2) and proficiency in language of instruction correlated positively with app progress. As children's L1 was significantly stronger than their L2 proficiency, this suggests the apps were most effectively implemented in their L1. This study advances the conjoining of bilingual educational theories to educational apps in a controlled, real-world, bilingual immersion setting and highlights important directions for improving app-based mathematics instruction for bilingual children. Practitioner Notes What is already known about this topic Educational maths apps, available in multiple languages are increasingly popular. Emerging evidence demonstrates the benefits of maths apps for supporting children's mathematical development. To understand "what works" in the use of maths apps we need to consider factors that may impact outcomes, including children's proficiency in the language of instruction. What this paper adds When delivered in the child's first or second language, maths apps can support the acquisition of basic maths skills. To maximise engagement and learning with maths apps, children should have a sufficient level of proficiency in the language of instruction. Implications for practice and/or policy When deciding to implement maths apps with young children, educational practitioners and parents should consider the individual child's proficiency in the languages spoken.

Petersen, G. B., Klingenberg, S., Mayer, R. E., & Makransky, G. (2020). **The virtual field trip: Investigating how to optimize immersive virtual learning in climate change education**. *British Journal of Educational Technology*, *51*(6), 2098-2114. https://doi.org/10.1111/bjet.12991
Immersive Virtual Reality (IVR) is being used for educational virtual field trips (VFTs) involving scenarios that may be too difficult, dangerous or expensive to experience in real life. We implemented an immersive VFT within the investigation phase of an inquiry-based learning (IBL) climate change intervention. Students investigated the consequences of climate change by virtually traveling to Greenland and exploring albedo and greenhouse effects first hand. A total of 102 seventh and eighth grade students were randomly assigned to one of two instructional conditions: (1) narrated pretraining followed by IVR exploration or (2) the same narrated training material integrated within the IVR exploration. Students in both conditions showed significant increases in declarative knowledge, self-efficacy, interest, STEM intentions, outcome expectations and intentions to change behavior from the pre- to post-assessment. However, there was a significant difference between conditions favoring the pretraining group on a transfer test consisting of an oral presentation to a fictitious UN panel. The findings suggest that educators can choose to present important prerequisite learning content before or during a VFT. However, adding pretraining may lead to better transfer test performance, presumably because it helps reduce cognitive load while learning in IVR.

Pletz, C., & Zinn, B. (2020). **Evaluation of an immersive virtual learning environment for operator training in mechanical and plant engineering using video analysis**. *British Journal of Educational Technology*, *51*(6), 2159-2179. https://doi.org/10.1111/bjet.13024
A structural evaluation is imperative for developing an effective virtual learning environment. Understanding the extent to which content that has been learned virtually

can be applied practically holds particular importance. A group of persons from the technical field of mechanical and plant engineering (N = 13) participated in a virtual operator training for a case application of additive manufacturing. To evaluate the virtual learning environment the participants answered quantitative questionnaires and were asked to apply what they had learned virtually to the real machine. Both the virtual training and testing phase on the real machine were recorded by video (800 minutes in total). The category system resulting from a structured qualitative video analysis with a total of 568 codes contains design-, instruction- and interaction-related optimisation potentials for further development of the virtual learning sequence. Mistakes, difficulties and other anomalies during the application on the real machine provide further revision options. The study uses video data for the first time to derive optimisation potentials and to investigate the learning transfer of virtually learned action knowledge to the real-world activity.

Ríos Félix, J. M., Zatarain Cabada, R., & Barrón Estrada, M. L. (2020). **Teaching computational thinking in Mexico: A case study in a public elementary school**. *Education and Information Technologies*, *25*(6), 5087-5101. https://doi.org/10.1007/s10639-020-10213-4
Digital literacy is a need for our current society. In Mexico, digital incursion programs are barely implemented, which represents an educational delay compared to other countries that have faced the need to integrate the teaching of digital skills, in a wide range of educational levels. This paper presents a learning environment of Computational Thinking called EasyLogic3D, which proposes a novel integration of emotional recognition, gamification, and a 3D environment. Experiments with 102 children from an Elementary School in Mexico were carried out, where cognitive and technological acceptance tests were performed. Analyzing the Cronbach's alpha score, we found that students accepted the technology (learning environment). Also, the results showed that the perceived enjoyment when using the learning environment was positive. On the other hand, results show that the learning gained through using the learning environment was comparable to a class session in which the same topics and exercises were presented.

Rudhumbu, N. (2020). **Antecedents of university lecturers' intentions to adopt information and communication technology in Zimbabwe**. *Education and Information Technologies*, *25*(6), 5117-5132. https://doi.org/10.1007/s10639-020-10205-4
The rapid advances of information and communication technology (ICT) have transformed teaching and learning in universities. This study therefore sort to establish antecedents of university lecturers' intention to adopt ICT adoption in Zimbabwean universities. It employed a quantitative approach which used a structured questionnaire on a sample of 600 university lecturers from 6 selected public universities. Descriptive statistics and regression analysis were used for data analysis. Results of the study showed that policy support infrastructure (ICT policy, ICT policy implementation strategy and clear ICT vision), technical support infrastructure (competent support team, ICT tools and systems, internet and reliable power supply) and technical skills infrastructure (training and skills level) acted as antecedents to ICT adoption in Zimbabwean universities. A lack of ICT policy implementation plans and obsolete ICT infrastructure acted as major barriers to ICT adoption. These results have managerial and operational implications for universities to consider for effective adoption of ICT.

Saha, S. K., & Gupta, R. (2020). **Adopting computer-assisted assessment in evaluation of handwritten answer books: An experimental study**. *Education and Information Technologies*, *25*(6), 4845-4860. https://doi.org/10.1007/s10639-020-10192-6
The use of computers in educational assessment is a widely explored territory. Several studies have been performed to show the effectiveness of computer-assisted assessment (CAA) and it has been accepted in various education sectors. However, due to the lack of sufficient infrastructure and other issues, the paper-based examination is still being used for educational assessment in many countries including India. Existing CAA frameworks require the examination to be conducted on a digital platform. So, these do not apply to paper answer books. We propose a two-phase framework for automatic evaluation of handwritten answer books. The first phase converts the answers written on papers to a digital form using a neural network-based handwritten answer recognizer. The second phase evaluates the answer to generate a numerical score. For this evaluation, we use a model answer-based approach where various levels of similarities between the model answer and a student answer are computed. To assess the performance of the developed system, we apply it to the evaluation of class VII Social Science Geography answer books of an Indian school. The experimental result shows that the proposed approach is quite promising.

Shams, S., Haq, M. A. ul, & Waqar, Y. (2020). **Open educational resources (OER) usage trends among university students of Pakistan**. *Education and Information Technologies*, *25*(6), 5637-5654. https://doi.org/10.1007/s10639-020-10195-3
Benefits of using Open Educational Resources (OERs) across the world have perpetuated great interest to baseline and report how OERs are used in developing countries. This is an initial study to baseline trends of OER use by university students in Pakistan and to present their perceived benefits of OER use to attain academic challenge, collaborative learning, and to enrich their educational experience. Data for this study has been collected from university students from five different academic disciplines and different degree programs. 91% of the respondents reported that they had used OERs. However, the perceived benefits of OER use are significantly different for students studying at different education levels and across disciplines. Social science students and female students have a better perception of the benefits of OER than other academic disciplines and their male counterparts. Post-hoc analysis revealed that MPhil/Ph.D. students had the highest rank for choosing mental activity and collaborative learning as a benefit of OERs. Fundamental barrier highlighted by respondents regarding the effective use of OER is lack of internet followed by lack of time and skill to use OERs.

Sidik, D., & Syafar, F. (2020). **Exploring the factors influencing student's intention to use mobile learning in Indonesia higher education**. *Education and Information Technologies*, *25*(6), 4781-4796. https://doi.org/10.1007/s10639-019-10018-0
This study proposes to explore the key factors influencing the university students' intention to use mobile learning system in Indonesia. For this purpose, four direct factors incorporated into the Unified Theory of Acceptance and Use Technology (UTAUT): performance expectancy, effort expectancy, external influence, quality of services and another additional factor — individual innovativeness were examined. The study is based on an online survey being conducted among 284 respondents. Exploratory factor analysis is performed at the beginning of the analysis to extract six factors (5 independents, one dependent) using IBM SPSS then tested confirmative factor analysis employed structural equation modeling. All five investigated factors (independent) are

significantly influencing the intention of the student to use mobile learning (dependent). The result is also indicated that the UTAUT obtained two extra factors that are personal innovativeness and prior mobile social media experiences as a catalyst.

Silamut, A., & Petsangsri, S. (2020). **Self-directed learning with knowledge management model to enhance digital literacy abilities**. *Education and Information Technologies*, *25*(6), 4797-4815. https://doi.org/10.1007/s10639-020-10187-3
Self-Directed Learning (SDL) is a process in which adult learners initiate their inner motivation to learn by themselves to increase their knowledge, skills and experiences from resources and evaluating learning outcomes. Knowledge Management (KM) is the process of creating, sharing, using and managing the knowledge and resources of an organization. Learners use KM to gain their knowledge. To access to these resources, the learners must know Digital Literacy Abilities (DLA). We developed a model for SDL with KM to enhance DLA: The model was synthesized from related works and verified by five experts in various fields. Data instrument was derived from focus group discussion including a five-level Likert scale of the appropriateness of the model, and experts' opinions and recommendations. Then, collected data were analyzed with content analysis; mean (x$bar {x}$), standard deviation (S.D.). After discussion, the model was adjusted according to the experts' recommendations. It contained three circles from inner to outer: SDL, KM, and DLA, respectively. SDL had four steps: readiness triggers, setting goal and planning, learning activities, and learning's evaluation. KM contained five steps: knowledge discovery, knowledge capture and storage, knowledge application and distribution, knowledge evaluation, and knowledge creation. DLA had four aspects: operation literacy, analysis and evaluation literacy, value and creation literacy, and social-culture-organization cooperation literacy. Overall, the results of analyzed data from the experts towards on appropriateness of the model were at high level (x$bar {x}$= 4.4, S.D. = 0.6). This model will be continued to implement for adult learners' activities.

Sliep, C., & Marnewick, C. (2020). **The quest in delivering quality IT services: The case of a higher education institution**. *Education and Information Technologies*, *25*(6), 4817-4844. https://doi.org/10.1007/s10639-020-10198-0
IT leaders in higher education institutions (HEI) face a challenge to incorporate the continuous transformation of technology and the way it is applied in HEIs to improve the quality of IT service delivery. Managing IT per se, became more than managing IT systems with a fixed set of knowledge and skills. IT leaders needs to manage IT as a value stream not as separate entities. Various best practices, methodologies, standards and frameworks exist which all address some aspect of the IT value stream. A multi-dimensional framework was designed to address the entire IT value stream and to improve the quality of service delivery and thus satisfy stakeholders' expectations. The framework incorporates various best practices, methodologies and standards. The framework was validated using in-depth interviews. Thirty interviewees from three entities within the HEI, participated in the research. The purpose of the interviews was to determine which elements of the framework contribute to quality IT services. Respondents completed a service quality matrix as part of the interview. The results were analysed to determine the respondents' understanding and interpretation of the delivery of quality services. The results highlighted a discrepancy between the IT department's perception of quality service and the recipients' perception of said services. The results

also highlighted that the framework can be used to align the various service quality perceptions.

Stancin, K., Poscic, P., & Jaksic, D. (2020). **Ontologies in education – state of the art**. *Education and Information Technologies*, *25*(6), 5301-5320. https://doi.org/10.1007/s10639-020-10226-z
Ontologies are used with great success in education because they allow to formulate the representation of a learning domain by specifying all concepts involved, relations between concepts and all properties and conditions that exist. The goal of this paper is to present the field of ontologies and give an overview of recent research in the field, in the context of education. As this paper presents a literature review, papers from the last five years were collected from the IEEE Xplore database, analysed and categorized based on the use of ontologies for: curriculum modelling and management, describing learning domains, learning data, and e-learning services. From the collected papers, a slightly growing trend in the contribution of ontologies to educational systems can be observed. Most studies used ontologies for describing learning domains, and some of the 95 collected papers could not fit in just one category because a system used more than one ontology. Throughout the work, the following contributions have been made: the term ontology was defined, the most common types of ontologies and commonly used methodologies for building ontologies were identified, and an overview of existing systems that use ontologies in the domain of education was given.

Tafesse, W. (2020). **The effect of social networking site use on college students' academic performance: the mediating role of student engagement**. *Education and Information Technologies*, *25*(6), 4747-4763. https://doi.org/10.1007/s10639-020-10162-y
The widespread adoption of social networking sites among college students has motivated an increasing number of researchers to discern the relationship between social networking site use and academic performance. However, these studies mainly address the direct effect of social networking site use on academic performance, thus failing to identify and incorporate relevant explanatory mechanisms. The present study addresses this gap by examining the mediating role of student engagement in the relationship between social networking site use and academic performance. The study gathered pertinent data from a sample of college students (N = 180) by using a questionnaire, which measured social networking site use based on the number of hours students spent daily on six popular social networking sites, student engagement using a ten-item scale adapted from the literature, and academic performance using semester grade-point average. An empirical test of the mediation model using the PROCESS macro demonstrates that student engagement mediates the negative association between social networking site use and college students' academic performance. This study contributes to the literature by documenting pioneering evidence of the mediating role of student engagement.

Tan, Z., Beuran, R., Hasegawa, S., Jiang, W., Zhao, M., & Tan, Y. (2020). **Adaptive security awareness training using linked open data datasets**. *Education and Information Technologies*, *25*(6), 5235-5259. https://doi.org/10.1007/s10639-020-10155-x
Cybersecurity is no longer an issue discussed only between the professionals or technologists, but it is also closely related to ordinary people whose daily life is exposed to kinds of cyberattacks. And Womabat Security Technologies conducted a survey revealed that ransomware is an unknown concept to nearly two-thirds of employees. In

practical, almost 95% of cybersecurity attacks are due to human error. At fact, expensive and sophisticated systems cannot work effectively without considering the human factor, while human factor is the major vulnerability in cybersecurity. Thus, it has great significance to give people cybersecurity awareness training. In this paper, we present a system, named ASURA, providing adaptive training aimed at improving cybersecurity awareness of people. Three issues can't be neglected in adaptive cybersecurity awareness training, as follows. Firstly, we need to decide the proper training contents from the huge training materials. Secondly, the training contents should be timely updated, as cyber attacks constantly changing. At last, we should conduct training through effective and acceptable approach. We solved above three issues in this paper, and the innovative idea of this paper is constructing hierarchical concept map from the LOD database DBpedia. Then, we employ a series of processing on hierarchical concept map, including PageRank algorithm used to calculate the importance of each concept node, and filtering used to filtered out undefined and unrelated concepts. In particular, we get training contents from DBpedia dynamically and timely updated, so that training contents is keeping up to date. ASURA delivered training contents completely online, thus significant trimmed budget and allowed learners accessing training outside of a traditional classroom. Moreover, ASURA provide adaptive training targeted to individual learner, as it generate training contents based on the keyword from the learner.

Tang, H., Lin, Y.-J., & Qian, Y. (2020). **Understanding K-12 teachers' intention to adopt open educational resources: A mixed methods inquiry**. *British Journal of Educational Technology*, *51*(6), 2558-2572. https://doi.org/10.1111/bjet.12937
Teachers in K-12 settings often teach out of textbooks in order to provide differentiated instruction. Open educational resources (OER) might be an effective alternative to traditional textbooks for K-12 teachers because of a free access to a rich collection of open-licensed educational materials. Understanding how to encourage teachers to accept OER is thus critical. However, existing evidence mainly concerns the advantage of OER in cost reduction but overlooks the merit of openness. To fill this gap, this mixed methods inquiry, implementing the technology acceptance model, integrated qualitative and quantitative findings to obtain a comprehensive understanding of teachers' intentions of adopting OER in K-12 settings. This study found that perceived ease of use and perceived usefulness predicted K-12 teachers' intention to adopt OER with attitudes toward OER as a mediating variable. Perceived ease of use also determined perceived usefulness. Teachers' perceptions of OER adoption were also examined for additional insight into the quantitative findings. Practical implications of adopting OER in K-12 curriculum were discussed.

Tanjung, M. A. P., & Sitompul, O. S. (2020). **"Kian Santang" game as historical educational media using digital storytelling concept**. *Education and Information Technologies*, *25*(6), 5379-5388. https://doi.org/10.1007/s10639-020-10209-0
The history of the Indonesian state began to be forgotten by its young generation. Today's young generation or so-called "millennial" rarely studies history pursued by previous state fighters. One of the histories of the Indonesian state is the story of Prince Kian Santang. The lesson that taken from the story of Prince Kian Santang is the wise character of Prince Kian Santang, which used as an example for Indonesian people who are facing the current era of globalisation. Prince Kian Santang is not trapped in such a position and is more concerned with society and community rights. Through Digital Storytelling and educational games, researchers hope that Indonesian teens will not

forget the Prince Kian Santang story. Using the ADDIE methodology, researchers designed the game "Prince Kian Santang" and got satisfactory results.

Thorvaldsen, S., & Madsen, S. S. (2020). **Perspectives on the tensions in teaching with technology in Norwegian teacher education analysed using Argyris and Schön's theory of action**. *Education and Information Technologies*, *25*(6), 5281-5299. https://doi.org/10.1007/s10639-020-10221-4
Teachers' professional digital competence (PDC) is of increasing importance in classrooms in the majority of EU countries. Norway is one of the countries that has been exposed to a strong top-down implementation of information and communication technology in education. However, despite national efforts, practitioners in the education system do not seem to work in line with the given policy. There is therefore a gap between the micro and macro levels, necessitating the need for a closer exploration of the issue. We have conducted a quantitative study of teacher educators and their students in Northern Norway (N = 112). Amongst the staff, professional attitudes have a stronger impact than PDC regarding the extent of the educational use of digital tools, whereas amongst students, PDC has a stronger influence. These results are interpreted using Argyris and Schön's theory of action in learning organisations.

Tzafilkou, K., Protogeros, N., & Chouliara, A. (2020). **Experiential learning in web development courses: Examining students' performance, perception and acceptance**. *Education and Information Technologies*, *25*(6), 5687-5701. https://doi.org/10.1007/s10639-020-10211-6
This study investigates students' performance, perception and acceptance when experiential learning approaches are integrated in Computer Science courses. An experiential learning approach has been designed to assist students in web development courses. The proposed learning approach in based on real-world examples and the abstraction of terminology using a sequential wizard-based logic. A survey model has been constructed and an exploratory study is conducted on 54 under and post graduate students. Results demonstrated high degree of perception and acceptance, as well as high performance scores. No gender differences have been detected in the examined sample and several strong correlations have been found among the measured variables. In particular, perceived ease of use and usefulness are strongly correlated to each other as well as to self-efficacy, willingness to learn and satisfaction. Satisfaction and self-efficacy are not correlated to each other, while performance has not been affected by anyone of the measured variables.

Ulum, Ö. G. (2020). **A critical deconstruction of computer-based test application in Turkish State University**. *Education and Information Technologies*, *25*(6), 4883-4896. https://doi.org/10.1007/s10639-020-10199-z
Artificial Intelligence (AI) is growing – as can be clearly observed not only from the rising recognition of assistance tools such as Siri (Apple) but also from the newly introduced Google Voiced Translator. Yet, some crucial benchmarks still have to be supplied before it can act as a proxy for a real instructor: imagination, creativity, and spontaneity. Automated assessment containing the use of AI is one of the recent education practices. It accelerates the time for exam grading, eliminates human prejudice, and is as precise as human assessors. However, it has encountered many criticisms in education community, in our case, English as foreign language (EFL) learning community. Therefore, this phenomenological inquiry examined Turkish EFL students' and instructors'

conceptions on the Versant English Test (VET), an automated test of spoken and written language functioning by means of an AI software. Using semi-structured interview questions and a focus-group discussion, the study adopted a qualitative research design in order to collect the required data. The findings show that EFL university students developed negative attitudes towards VET and that VET is not a reliable and valid test because same questions were observed to have appeared in the computer-based test. In addition, copying and pasting similar sentences produced better results, which decreased the validity and reliability of the test. Another important finding was that the test was reported to have measured only their memory skills but not their language skills. Besides, the curriculum was totally incongruent with the content of the test, which caused a severe washback in EFL learners.

UNESCO : Organisation des Nations unies pour l'éducation, la science et la culture, & EQUALS Skills coalition. (2020). ***Je rougirais si je pouvais : réduire la fracture numérique entre les genres par l'éducation***. Consulté à l'adresse https://unesdoc.unesco.org/ark:/48223/pf0000367416_fre.page=1
Ce rapport analyse l'écart entre les sexes en matière de compétences en TIC dans le monde. Il porte une attention particulière à l'impact des préjugés sexistes présents dans les applications d'intelligence artificielle les plus répandues comme les assistants vocaux numériques, fournit des exemples d'interventions et émet des recommandations pour aider les femmes et les filles à acquérir de solides compétences numériques par l'éducation. Les auteurs se penchent sur le rôle que peut jouer une éducation sensible au genre pour aider à redéfinir une vision sexospécifique de la technologie et garantir l'égalité entre les femmes et les hommes.

Vandeyar, T. (2020). **The academic turn: Social media in higher education**. *Education and Information Technologies*, *25*(6), 5617-5635. https://doi.org/10.1007/s10639-020-10240-1
Universities must transform to fulfil expectations of the knowledge society. At the same time academics are required to respond to the dynamic environment that information and communications technologies (ICT) bring to effective and efficient teaching methods. Utilizing a qualitative case study approach, this study set out to explore experiences of academics' as they made a pedagogic turn towards using social media technology for teaching in a resource-constrained context. The Technology Acceptance Model served as the theoretical mooring of this study. Data capture included a mix of semi-structured interviews, classroom observations, document analysis and field notes. Findings are presented as three academic turns. First, a turn away from the institutions' LMS due to contextual exigencies. Second, a pedagogical turn towards Web 2.0 technologies using social media tools to enhance their pedagogy. Third, a beliefs and attitude turn about the affordances of social media; augmenting academics' resilience to persevere with this technology of choice. This study recommends that the use of social media networking in higher education creates a viable form of technology enhanced teaching, particularly in resource-constrained contexts. Further studies should explore academics emerging pedagogical practices in their use of social media, and students' perceptions and engagement in social media learning communities.

Vicente, P. N., Lucas, M., Carlos, V., & Bem-Haja, P. (2020). **Higher education in a material world: Constraints to digital innovation in Portuguese universities and polytechnic**

institutes. *Education and Information Technologies*, *25*(6), 5815-5833. https://doi.org/10.1007/s10639-020-10258-5
Over the past decade, the societal impact of digital transformation, with the prospects of a Fourth Industrial Revolution, has led to an innovation imperative in European policymaking regarding higher education institutions (HEIs). However, not only is the institutional strategic planning of HEIs still understudied, as the individual perceptions of faculty members about existing constraints to digital innovation have been particularly overlooked. This article examines Portuguese universities and polytechnic institutes, the two components of the national higher education system, to (1) characterize the quality of the available digital infrastructure and resources (hardware and software) and (2) identify the main constraints to digital innovation. The study conducts the most comprehensive online questionnaire available to date on these topics across Portuguese HEIs (N = 547). The main constraints to digital innovation correspond to limited infrastructure and resources, lack of funding opportunities, insufficient technological resources, a conservative academic culture, and a lack of technical support. These barriers impact Portuguese regional development, as discussed in this study, highlighting the need for the modernization of HEIs.

VUORIKARI, R., PUNIE, Y., & GIRALDEZ, M. C. (2020). ***Emerging technologies and the teaching profession***. Consulté à l'adresse https://publications.jrc.ec.europa.eu/repository/bitstream/JRC120183/emerging_technologies_teaching_profession_jrc.pdf
Les technologies émergentes d'aujourd'hui auront-elles un impact sur la profession enseignante à l'avenir ? Quelles parties des tâches d'enseignement ou des processus d'apprentissage pourraient être remplacées, améliorées et transformées par l'automatisation, les algorithmes et les machines ? Le rapport propose huit scénarios tournés vers l'avenir. Ces scénarios pour un futur proche visent à résoudre un certain nombre de problèmes qui, selon les éducateurs d'aujourd'hui, les empêchent de dispenser une éducation et une formation de qualité. Les principaux défis émergeant des scénarios concernent des considérations éthiques et l'évolution des compétences des professionnels de l'enseignement.

Wang, L., & Chiang, F.-K. (2020). **Integrating novel engineering strategies into STEM education: APP design and an assessment of engineering-related attitudes**. *British Journal of Educational Technology*, *51*(6), 1938-1959. https://doi.org/10.1111/bjet.13031
Science, technology, engineering, and mathematics (STEM) education has become an international priority. STEM education provides students with interdisciplinary knowledge and promotes the cultivation of high-level skills. However, STEM training opportunities for teachers are rare, which results in fewer opportunities for primary and secondary students to receive high-quality engineering education. Novel Engineering is an innovative strategy to integrate engineering and literacy in STEM education. To this end, the researchers developed, implemented and evaluated a novel engineering STEM software program based on the story of Robinson Crusoe. A quasi-experimental single-group pre- and posttest research method was adopted. A total of 72 students in two seventh grade classes at a junior middle school in Shanghai participated in the study. Data were collected and analysed through STEM learning interest scales, flow status scales, interviews and students' STEM work scores. The research findings demonstrated that students gave a high evaluation of the novel engineering STEM software program. Furthermore, this STEM software program contributed to students' significant

improvements in the attitudes of mathematics and 21st century skill and provided students with a lasting and better flow experience. Finally, suggestions were proposed for STEM software design, implementation and evaluation.

Wu, B., Yu, X., & Gu, X. (2020). **Effectiveness of immersive virtual reality using head-mounted displays on learning performance: A meta-analysis**. *British Journal of Educational Technology*, *51*(6), 1991-2005. https://doi.org/10.1111/bjet.13023
With the availability of low-cost high-quality head-mounted displays (HMDs) since 2013, there is a growing body of literature investigating the impact of immersive virtual reality (IVR) technology on education. This meta-analysis aims to synthesize the findings on the overall effects of IVR using HMDs compared to less immersive desktop virtual reality (DVR) and other traditional means of instruction. A systematic search was carried out on the literature published between 2013 and 2019. Thirty-five randomized controlled trials (RCTs) or quasi-experimental studies were identified. We conducted an analysis using the random effects model (REM) to calculate the pooled effect size. The studies were also coded to examine the moderating effects of their characteristics, such as learner stage, learning domain, learning application type, testing format, control group treatment and learning duration, on the outcome measure. The results showed that IVR using HMDs is more effective than non-immersive learning approaches with a small effect size (ES = 0.24). The key findings of the moderator analysis were that HMDs have a greater impact (a) on K-12 learners; (b) in the fields of science education and specific abilities development; (c) when offering simulation or virtual world representations; and (d) when compared with lectures or real-world practices. The meta-analysis also suggested that HMDs can improve both knowledge and skill development, and maintain the learning effect over time.

Wu, D., Yu, L., Yang, H. H., Zhu, S., & Tsai, C.-C. (2020). **Parents' profiles concerning ICT proficiency and their relation to adolescents' information literacy: A latent profile analysis approach**. *British Journal of Educational Technology*, *51*(6), 2268-2285. https://doi.org/10.1111/bjet.12899
Given the pivotal role of parents in their children's educational development, numerous studies have examined the impacts of parents' information and communications technology (ICT) proficiency on adolescents' information literacy. However, previous research has tended to treat parents as a holistic unit, ignoring the individual uniqueness of each parent in analyses. Thus, the first aim of this study was to explore the parent profiles in terms of ICT proficiency, which were developed through a person-centered approach employing latent profile analysis. Three distinct parent profiles were identified: quiescent users, compliant users and active users. The second aim of this study was to investigate the relationship between the parents' profile memberships and adolescents' information literacy. The results showed that, in general, adolescents whose parents were identified as active users and compliant users tended to perform better on an information literacy test than those of parents categorized as quiescent users. More specifically, those adolescents whose parents were classified as active users achieved significantly higher scores in the information literacy test than those of parents who fit within the profiles of compliant users and quiescent users. Based on the findings, this paper discusses several implications and strategies for enhancing the adolescents' information literacy.

Yang, Y., Du, Y., Aalst, J. van, Sun, D., & Ouyang, F. (2020). **Self-directed reflective assessment for collective empowerment among pre-service teachers**. *British Journal of Educational Technology*, *51*(6), 1960-1980. https://doi.org/10.1111/bjet.13040
This study investigated the role and process of self-directed reflective assessment (SDRA) enhanced by learning analytics to support pre-service teachers' (PTs') collective empowerment in a knowledge-building (KB) classroom. The participants were 43 second-year PTs from a compulsory course taught by a teacher who had 2 years' teaching experience. A comparison class of 47 PTs, taught by the same teacher and studying the same topics in a regular KB environment, also participated. Statistical analysis revealed significant differences in participation and domain understanding between the experimental class and the comparison class. Qualitative tracing of the SDRA group's online discourse indicated that the PTs were empowered and that their collective empowerment increased gradually over time. Analysis of the PTs' prompt sheets revealed that analytic-supported SDRA helped the PTs engage in collective decision making to choose and judge promising ideas, and in collective synthesis and "rise-above" of ideas, thus helping them engage in high-level collective empowerment. The findings have important implications for the design of technology-rich environments as metacognitive tools to support learners' empowerment, and they shed light on how teachers can use such tools to engage learners in metacognitive practices to increase their empowerment.

Yeşilbağ, S., Korkmaz, Ö., & Çakir, R. (2020). **The effect of educational computer games on students' academic achievements and attitudes towards English lesson**. *Education and Information Technologies*, *25*(6), 5339-5356. https://doi.org/10.1007/s10639-020-10216-1
This study aims to determine the effects of educational computer games on the tenth grades students' academic achievement and attitudes towards the course. The research was conducted with 60 tenth-grade students attending an Anatolian high school during the school year of 2019–2020. The study was designed as a quasi-experimental design with a pre and post-test experiment and control group. The subjects were taught through traditional teaching activities based on the English education program in the control group while educational computer games were used as teaching activities in the experiment group. The academic achievement test (Kr-20 = 0,83) and attitudes towards English scale (Cronbach's Alpha = 0.95) were conducted as the pre and post-test. Data analyses showed that the experimental group performed better than the control group in academic achievement test. However, there is no statically significant difference between two groups in term of attitudes towards English. The results suggest that computer game can be used in education as an ICT tool to increase students' academic success in English learning.

Yousafzai, B. K., Hayat, M., & Afzal, S. (2020). **Application of machine learning and data mining in predicting the performance of intermediate and secondary education level student**. *Education and Information Technologies*, *25*(6), 4677-4697. https://doi.org/10.1007/s10639-020-10189-1
The presented work is a student marks and grade prediction system using supervised machine learning techniques, the system is developed on the historic performance of students. The data used in this research is collected from Federal Board of Intermediate and Secondary Education Islamabad Pakistan, there are 7 regions in FBISE i.e. Punjab, Sindh, Khyber Pakhtunkhwa, Balochistan, Azad Jammu and Kashmir and overseas. The

aims of this work is to analyze the education quality which is closely tightened with the sustainable development goals. The implementation of the system has produced an excess of data which must be processed suitably to gain more valuable information that can be more useful for future development and planning. Student marks and grade prediction from their historic academic data is a popular and useful application in educational data mining, so it is becoming a valuable source of information which can be used in different manners to improve the education quality in the country. Related work shows that several method for academic grade prediction are developed for the betterment of teaching and administrative staff of an educational organizational system. In our proposed methodology, the obtained data is preprocessed to improve the quality of data, the labeled student historic data (29 optimal attributes) is used to train decision tree classifier and regression model. The classification system will predict the grade while the regression model will predict the marks, finally the results obtained from both the model are analyzed. The obtain results show the effectiveness and importance of machine learning technology in predicating the students performance.

Orientation scolaire et professionnelle

Robert, A. (2020). **Reprises d'études en début de vie active : acquérir un diplôme reste le Graal**. *Céreq Bref*, (396). Consulté à l'adresse https://www.cereq.fr/reprises-detudes-en-debut-de-vie-active-acquerir-un-diplome-reste-le-graal
Les reprises d'études en début de vie active sont de plus en plus fréquentes à tous les niveaux de diplômes avec une légère réduction des inégalités sociales d'accès. Les caractéristiques des jeunes les plus concernés évoluent peu au fil des générations : jeunes dont le plus haut niveau de diplôme est le baccalauréat et parmi eux, ceux engagés dans l'enseignement supérieur sans y avoir obtenu de diplôme et jeunes non diplômés de l'enseignement secondaire. Connaître des situations moins favorables sur le marché du travail accentue la reprise d'études.

Politique de l'éducation et système éducatif

Abdulnour, J. (2019). ***Pour une inclusion scolaire et une socialisation des EANA : le scénario d'apprentissage-action*** (Phdthesis, Institut National des Langues et Civilisations Orientales- INALCO PARIS - LANGUES O'). Consulté à l'adresse https://tel.archives-ouvertes.fr/tel-02952908
Les EANA (Élèves allophones nouvellement arrivés) ont besoin d'une inclusion scolaire ainsi que d'une socialisation assez rapide, que ce soit dans les classes du cursus ordinaire ou dans la vie de tous les jours. Les méthodologies classiques ne répondent pas effectivement à ces besoins urgents. Nous nous sommes donc demandés s'il y avait d'autres méthodologies plus efficaces et plus pertinentes. Pour répondre aux besoins urgents des EANA nous avons proposé d'adopter une approche qui, théoriquement, favorise non seulement la communication mais aussi l'action dans de multiples situations grâce à des scénarios d'apprentissage-action, et par conséquent elle accélère l'appropriation du français en milieu à la fois scolaire et sociale, et elle améliore leur accueil et leur intégration en France : l'approche communic'actionnelle. Cette « démarche didactique translangue », proposée par Claire BOURGUIGNON après un

long travail mené sur le CECRL, vise à rendre opérationnelle la perspective actionnelle. Ainsi, notre travail de recherche avait comme objectif de vérifier si cette approche puisse être mise en place dans une UPE2A (Unités pédagogiques pour élèves allophones arrivants) et répond aux besoins urgents des EANA. Ce travail de recherche a guidé nos enquêtes que nous avons réalisées durant des années à partir de l'année solaire de 2015 jusqu'en 2019, pour, enfin de compte, proposer des remédiations à cette approche et présenter des propositions didactiques en sa faveur.

Atlas régional : les effectifs d'étudiants en 2017-2018 - édition 2019. (s. d.). Consulté 9 novembre 2020, à l'adresse Ministère de l'Enseignement supérieur, de la Recherche et de l'Innovation website: //www.enseignementsup-recherche.gouv.fr/cid147537/atlas-regional-les-effectifs-d-etudiants-en-2017-2018-edition-2019.html
L’Atlas régional 2017-2018 est un outil indispensable pour une bonne appréhension de la structuration territoriale de l’enseignement supérieur et pour l’élaboration de stratégies territoriales. Il présente, sous forme de cartes, de graphiques et de tableaux, la diversité du système français d’enseignement supérieur.

BAKER, T. (2020). ***Covid-19 aftershocks: access denied: teenage pregnancy threatens to block a million girls across Sub-Saharan Africa from returning to school***. Consulté à l'adresse https://www.wvi.org/sites/default/files/2020-08/Covid19%20Aftershocks_Access%20Denied_small.pdf
La fermeture des écoles liée à la Covid-19 a augmenté le nombre de grossesses des adolescentes et mis en péril leur éducation. Centré sur l'Afrique subsaharienne, le rapport évoque les causes des grossesses adolescentes (manque d'éducation et de services en matière de santé sexuelle et reproductive), les obstacles empêchant leur retour en classe et les conséquences en termes de santé (les grossesses précoces sont la principale cause de décès des filles de 15 à 19 ans dans le monde), de bien-être, mais aussi de perte de capital humain et de coût économique pour les pays. Il émet enfin des recommandations pour que les filles enceintes puissent continuer à apprendre pendant et après la crise.

Bellamy, V. (2020). **A la rentrée 2020, les élèves de terminale précisent leur choix de parcours**. *Note d'information*, (20.38). Consulté à l'adresse https://www.education.gouv.fr/media/72964/download
À la rentrée 2020, les 376 000 élèves de terminale générale choisissent de poursuivre deux des trois enseignements de spécialité suivis en première générale l'année précédente. Pour les deux enseignements conservés, qui viennent compléter les enseignements de tronc commun, 41 % des élèves de terminale générale ont choisi les mathématiques, un tiers la physique-chimie ou les sciences économiques et sociales (SES) et 27 % les sciences de la vie et de la Terre (SVT) ou l'histoire-géographie, géopolitique et sciences politiques. La doublette la plus fréquemment choisie est « mathématiques, physique-chimie », par 20 % des élèves. Parmi les quatre combinaisons les plus fréquentes, qui regroupent la moitié des effectifs de terminale générale, trois sont « scientifiques ». La sous-représentation des filles dans tous les enseignements scientifiques sauf en SVT, constatée pour les premières générales de la rentrée 2019, se retrouve pour les terminales générales à la rentrée 2020. Les élèves de première générale de la rentrée 2020 confirment la diversification des parcours observée en 2019 et ont assez peu modifié les choix faits par

leurs aînés l'année précédente : mathématiques, SES, physique chimie et SVT restent toujours les spécialités les plus choisies. Cependant, les mathématiques et la physique-chimie le sont un peu moins qu'en 2019, au profit des SES principalement. La triplette la plus choisie reste « mathématiques, physique-chimie, SVT », pour environ un quart des élèves de première générale.

BOESKENS, L., NUSCHE, D., & YURITA, M. (2020). ***Policies to support teachers' continuing professional learning: A conceptual framework and mapping of OECD data***. Consulté à l'adresse https://www.oecd-ilibrary.org/education/policies-to-support-teachers-continuing-professional-learning_247b7c4d-en;jsessionid=AT6_2DsQsgpwyaBlKGG_4pyi.ip-10-240-5-122
L'étude de l'OCDE sur la formation professionnelle des enseignants analyse la continuité dans le temps du parcours de formation des enseignants, depuis leur formation initiale jusqu'à leurs premières années d'enseignement et au-delà. Le deuxième volet de l'étude, en cours, s'intéresse aux politiques publiques soutenant la formation professionnelle continue (FPC) en se concentrant sur cinq dimensions. Qu'est-ce qui motive les enseignants à se lancer dans la FPC ? Comment renforcer l'accès à la FPC ? De quelle manière et par qui est-elle assurée ? Comment garantir sa qualité ? Ce document propose un cadre théorique et analytique pour l'étude et cartographie les indicateurs de l'OCDE disponibles.

Bouchetal, T. (2020). **Les évolutions de la voie professionnelle en France : quelles conséquences sur les dynamiques enseignantes à l'échelle d'un établissement ?** *Recherches en éducation*, (42). https://doi.org/10.4000/ree.1543
Dans un contexte d'évolution de la voie professionnelle, cet article cherche à mieux comprendre comment, à l'échelle d'un établissement du secondaire, un processus d'interprétation des réformes s'opère, révélant des dynamiques professionnelles enseignantes variées. Dans le cadre d'une enquête ethnographique au sein d'un lycée professionnel, l'analyse des données recueillies auprès des professeurs de plus de cinquante ans (proportion importante de l'effectif enseignant) permet d'établir que la réception et la mise en œuvre des prescriptions s'élaborent au sein de collectifs fortement configurés par les filières et les disciplines, dans lesquels l'engagement est pondéré par la nature des parcours et des motifs menant à l'enseignement professionnel.

Brun, L. (2020). **67 909 élèves allophones nouvellement arrivés en 2018-2019 : neuf sur dix bénéficient d'un soutien linguistique ou d'une scolarité dans un dispositif spécifique**. *Note d'information*, (20.39). Consulté à l'adresse https://www.education.gouv.fr/media/72996/download
Au cours de l'année scolaire 2018-2019, 67 909 jeunes ayant des besoins éducatifs particuliers dans le domaine de l'apprentissage du français langue seconde ont été scolarisés en école élémentaire, en collège ou en lycée.

BURKE, G., KARMEL, T., & MACKENZIE, B. (2020). ***A vocational education response to the pandemic***. Consulté à l'adresse https://tda.edu.au/wp-content/uploads/2020/10/Mackenzie-Research-Institute-A-Vocational-Education-Response-to-the-Pandemic.pdf
Certains élèves peuvent ne pas avoir reçu le soutien nécessaire pour rester engagés dans l'éducation. Ce groupe important d'élèves va payer un lourd tribut à la pandémie de

COVID-19. En réponse, les auteurs proposent dans ce document de développer en Australie une qualification de l'enseignement et de la formation professionnels, le diplôme d'études professionnelles, qui utilise les modules de formation existants et intègre des compétences en lecture, en calcul et dans le domaine d numérique. Il est également proposé d'incorporer une allocation fixée au taux de l'allocation jeunesse. La qualification ne sera délivrée qu'à temps plein, offrant ainsi une alternative substantielle à un apprentissage ou à un diplôme universitaire.

Cariveau, T., Shillingsburg, M. A., Alamoudi, A., Thompson, T., Bartlett, B., Gillespie, S., & Scahill, L. (2020). **A Structured Intervention to Increase Response Allocation to Instructional Settings for Children with Autism Spectrum Disorder**. *Journal of Behavioral Education*, *29*(4), 699-716. https://doi.org/10.1007/s10864-019-09340-x
Access to early intensive behavioral intervention for children with autism spectrum disorder is commonly recommended. Intervention programs may include high rates of instructional trials, which may evoke escape-maintained problem behavior. Recent research on "pairing" or "rapport-building" interventions have sought to reduce the likelihood that problem behavior occurs during instruction using antecedent manipulations. The current study evaluated a structured intervention that included differential reinforcement and demand fading to increase participants' response allocation to instructional settings without the use of physical guidance. Nine minimally verbal girls under the age of 6 years with autism spectrum disorder enrolled in the study. The protocol was effective for seven of the nine participants. One participant did not complete the protocol due to competing behavior and an additional participant did not require the intervention. Our findings suggest that the structured intervention was effective in increasing appropriate behavioral repertoires that are necessary for children with autism spectrum disorder to effectively benefit from early educational programs.

Chello, F. (2020). **Faire face aux tensions liées à la reconfiguration du système universitaire italien : la voix des professeurs(es)**. *Recherches en éducation*, (42). https://doi.org/10.4000/ree.1419
La reconfiguration du système universitaire est un phénomène international d'actualité. Il est caractérisé par de nombreux changements liés aux pratiques quotidiennes de tous les acteurs qui vivent dans ce contexte (professeurs, étudiants, personnel technique-administratif, etc.). Parmi ces changements, l'article se concentre sur les transformations de l'agir professionnel des professeurs universitaires – avec une attention particulière aux activités de recherche, d'enseignement et de gouvernance – à travers l'analyse des résultats d'une recherche menée à l'université Suor Orsola Benincasa de Naples. Réalisée à partir d'une posture épistémologique et méthodologique de type compréhensive, la recherche s'est articulée en deux phases successives. Une première phase exploratoire a permis de préciser les questions de recherche, de choisir le terrain d'investigation, d'élaborer des hypothèses ancrées et de construire les outils méthodologiques pour l'enquête empirique. La deuxième phase, faisant usage de l'entretien semi-structuré, a visé à faire émerger et à déconstruire les représentations dominantes de l'agir professionnel. Les résultats montrent que, pour faire face aux tensions liées à la reconfiguration du système universitaire italien, les professeurs d'UNISOB oscillent entre différentes grammaires actionnelles.

Chetrit, J. (2020, novembre 5). **Les tâtonnements de l'obligation de formation pour les 16-18 ans**. Consulté 6 novembre 2020, à l'adresse Alternatives Economiques website:

https://www.alternatives-economiques.fr/tatonnements-de-lobligation-de-formation-16-18-ans/00094339
Identifier les décrocheurs de 16-18 ans et leur assurer une formation reste un défi pour les missions locales et les organismes de formation chargés de les accompagner.

Commission européenne. (2020a). ***Prospective report on the future of assessment in primary and secondary education***. Consulté à l'adresse https://op.europa.eu/fr/publication-detail/-/publication/0fa932c2-1345-11eb-9a54-01aa75ed71a1/language-en/format-PDF/source-168775998

Commission européenne. (2020b). ***Strengthening the quality of early childhood education and care through inclusion***. Consulté à l'adresse https://op.europa.eu/en/publication-detail/-/publication/d25366dd-c578-11ea-b3a4-01aa75ed71a1/language-en
Le taux de scolarisation dans l'éducation et l'accueil de la petite enfance (EAJE) reste significativement bas en Europe, et les preuves suggèrent un accès limité à des services d'EAJE de qualité pour les enfants issus de milieux défavorisés. L'inclusion dans l'éducation est un processus continu de suppression des obstacles qui empêchent certains apprenants de participer à une éducation de qualité. Cette note politique démontre que l'EAJE inclusif pourrait faire progresser l'objectif de l'éducation inclusive, en garantissant que l'inclusion intervienne tôt dans la trajectoire de l'apprentissage tout au long de la vie.

Croguennec, Y. (2020). **Les élèves du premier degré à la rentrée 2020**. *Note d'information*, (20.36). Consulté à l'adresse https://www.education.gouv.fr/media/72967/download
Du fait des évolutions démographiques, les effectifs sont en baisse par rapport à la rentrée précédente : - 86 900 élèves (soit - 1,3 %). Cette baisse est particulièrement marquée dans le préélémentaire (66 500 élèves, soit - 2,7 %) alors que l'élémentaire diminue de 0,5 % seulement (- 22 500 élèves). Les effectifs d'élèves en situation de handicap bénéficiant d'un dispositif unités localisées pour l'inclusion scolaire (ULIS) ne sont pas touchés par la baisse générale : ils sont en hausse de 4,2 % soit 2 100 élèves de plus qu'à la rentrée 2019. Trois caractéristiques de cette rentrée méritent d'être relevées : – la baisse des effectifs s'observe dans le secteur privé sous contrat comme dans le secteur public, mais le secteur privé hors contrat reste stable ; – les taux de scolarisation des enfants de 2, 3 et 4 ans diminuent ; – en éducation prioritaire, plus de 95 % des classes de CP mono-niveaux accueillent au plus 15 élèves.

Devos, L. (2020). **Le partenariat entre écoles et acteurs éducatifs externes**. *Les Cahiers de recherche du Girsef*, (122). Consulté à l'adresse https://ojs.uclouvain.be/index.php/cahiersgirsef/issue/view/4923
Face aux mutations rapides de la société dès la fin du XXe siècle, les écoles semblent compter de plus en plus sur les organisations de leur environnement pour assumer la diversification de leurs missions. Ainsi, le partenariat scolaire a-t-il pris de l'ampleur au cours des dernières décennies, au point de devenir une norme pour les personnels scolaires et les organisations de leur environnement. Cet article resitue d'abord la croissance de ces collaborations dans le cadre des évolutions sociétales, montrant en quoi cette croissance est liée à la globalisation, l'expansion de l'éducation, l'instanciation de l'acteur organisationnel ou la pluralisation des références normatives.

Il analyse également, à partir d'une recherche documentaire et d'une enquête qualitative dans le champ des « éducations à », comment ces phénomènes sociétaux se concrétisent sur le terrain local. Les données empiriques révèlent une double dépendance entre écoles et organisations extérieures. Cette relation apparait cependant asymétrique, au désavantage des acteurs non scolaires, forcés de s'adapter aux contraintes de l'école tout en construisant leur légitimité sur leur différence par rapport aux objets et à la forme scolaires. Dans une dernière partie, cet article analyse en quoi l'ouverture des écoles à leurs partenaires contribue à la fragmentation et à la réinstitutionnalisation du champ scolaire.

Dieusaert, P., George, E., & Tilly, M. (2020). **Les élèves du second degré à la rentrée 2020 : moins d'élèves en formations générales et technologiques mais plus en formations professionnelles en lycée**. *Note d'information*, (20.37). Consulté à l'adresse https://www.education.gouv.fr/media/72975/download
Les effectifs sont en hausse dans les collèges (+ 16 000 élèves), et dans les formations professionnelles en lycée (+ 1 400 élèves). Le nombre d'élèves décroît en revanche dans les formations générales et technologiques en lycée (- 8 000). Si les évolutions en collège sont largement dues aux évolutions démographiques, il n'en va pas de même en lycée. Dans les formations générales et technologiques, l'effet dominant est celui de la chute des redoublements en terminale, liée aux taux de réussite très élevés au baccalauréat 2020. Dans les formations professionnelles, la baisse des taux de sortie après une première année de CAP, une seconde ou une première professionnelles a contribué à soutenir les effectifs.

européenne, C., EACEA : Agence executive : éducation, audiovisuel et culture, Europe, E. : réseau d'information sur l'éducation en, & Commission européenne. (2020). ***Equity in school education in Europe: structures, policies and student performance: Eurydice report***. Consulté à l'adresse https://eacea.ec.europa.eu/national-policies/eurydice/sites/eurydice/files/equity_2020.pdf
Examinant 42 systèmes éducatifs européens, ce rapport donne un aperçu des politiques éducatives et des structures qui conduisent à des niveaux élevés d'équité dans l'enseignement scolaire. Il se penche notamment sur la participation à l'éducation et à l'accueil de la petite enfance, le financement des établissements scolaires, les politiques d'admission, les systèmes de suivi, le redoublement, l'autonomie de l'établissement, et sur le soutien aux écoles défavorisées et aux élèves peu performants. Les auteurs mettent en évidence de grandes différences entre les pays dans la lutte contre les inégalités dans l'éducation et montrent que le statut socio-économique joue un rôle trop important dans la réussite scolaire.

Franceško, M., Nedeljković, J., Živković, M., & Đurđić, S. (2020). **Public and private higher education institutions in Serbia: Legal regulations, current status and opinion survey**. *European Journal of Education*, *55*(4), 514-527. https://doi.org/10.1111/ejed.12424
This article provides insight into the state of higher education in Serbia, particularly in the context of reform processes based on European Higher Education Area principles. A multidimensional approach was taken, encompassing (a) a review and analysis of legal regulations relevant to the historical context of Serbia, (b) an examination of current working conditions at accredited state and private higher education institutions, (c) and a pilot survey of attitudes among the main participants in higher education teaching. The research gauged attitudes of university professors and students with work or study

experiences, respectively, at both state and private higher education institutions. Specific instruments for measuring attitudes were constructed for this study. Professors' attitudes toward state and private higher education were compared through the assessment of aspects of organisational culture including work organisation, stimulating atmosphere, innovation, and creativity. Students expressed their attitudes toward state and private higher education in terms of general atmosphere, curricula, grading criteria, and student status. The results indicate that private higher education was appreciated slightly more than state higher education; both professors and students held more positive attitudes of private higher education for all dimensions investigated.

Friesen, D. C., & Cunning, D. (2020). **Making explicit pre-service teachers' implicit beliefs about inclusive education**. *International Journal of Inclusive Education*, *24*(14), 1494-1508. https://doi.org/10.1080/13603116.2018.1543730
The present study investigated the development of pre-service teachers' skills, beliefs and knowledge about inclusive education. At Time 1, pre-service teachers completed questionnaires on their beliefs and wrote a Teaching Philosophy. At Time 2, they identified differences in their responses from Time 1 to Time 2. Overall, teacher candidates reported an increased sense of self-efficacy in inclusive practice. Their beliefs about learning and teacher responsibility remained largely unchanged. Teacher candidates advocated strongly for student-centred learning and inclusive practices. However, they became significantly more self-assured about their initial position and felt that they had more resources to teach their inclusive beliefs in the classroom.

Garnier, B., Derouet, J.-L., Malet, R., & Kahn, P. (2020). ***Sociétés inclusives et reconnaissance des diversités : Le nouveau défi des politiques d'éducation***. Consulté à l'adresse http://pur-editions.fr/detail.php?idOuv=5074
La charnière des XXe et XXIe siècles a été marquée par la prise en compte de la diversité en éducation sous plusieurs aspects : genre et orientation sexuelle, ethnie, langue, culture, religion, état de santé, âge, territoire… Le projet d'intégration sociale se conçoit de plus en plus dans la reconnaissance des différences et de moins en moins dans l'indifférence aux différences. Pour maintenir l'objectif de l'émancipation sociale, la définition de la citoyenneté s'enrichit de dimensions nouvelles : des compétences qui permettent de s'orienter dans des univers complexes et un renouvellement du cosmopolitisme correspondant à la mondialisation. Les articles parcourent dans plusieurs pays, différents aspects de cette diversité et confrontent les approches théoriques et méthodologiques, pour mettre en évidence les capacités d'initiative des enseignants et tracer les contours d'une société inclusive.

Gigante, J., & Gilmore, L. (2020). **Australian preservice teachers' attitudes and perceived efficacy for teaching in inclusive classrooms**. *International Journal of Inclusive Education*, *24*(14), 1568-1577. https://doi.org/10.1080/13603116.2018.1545875
This study explored preservice teachers' attitudes and perceived efficacy for teaching in inclusive classrooms. The participants were 163 students in their second year of a Bachelor of Education degree at an Australian university. Attitudes and perceived teaching efficacy were measured using the Teachers' Attitudes Towards Inclusion Scale Adjusted (TAISA) and the Teacher Efficacy for Inclusive Practice scale (TEIP). Preservice teachers in the early childhood and primary teaching areas reported more positive attitudes towards inclusion than did those who were training to become secondary school teachers. Levels of perceived efficacy did not differ across the three teaching areas. Participants who

had chosen a disability elective reported more positive attitudes, but not higher perceived efficacy. Those with better knowledge of disability legislation reported more positive attitudes and higher perceived efficacy than those who reported being less knowledgeable. Previous contact with a person with a disability was unrelated to attitudes and perceived efficacy. The findings highlight the importance of including core units in disability and inclusive education within all teacher training programmes.

Graham, L. J. (2020). **Questioning the impacts of legislative change on the use of exclusionary discipline in the context of broader system reforms: a Queensland case-study**. *International Journal of Inclusive Education*, *24*(14), 1473-1493. https://doi.org/10.1080/13603116.2018.1540668
This study analyses exclusion, enrolment cancellation, and suspension rates in government schools in the Australian state of Queensland to investigate the impact of legislation to extend principals' disciplinary powers. Results suggest that the provision of alternative disciplinary options, including Saturday detentions and community service, failed to curb increases in the use of enrolment cancellations and exclusions as originally intended. Moreover, suspension rates increased at more than double the rate of enrolment growth during the same period. Year on year analysis of suspension rates reveals two specific calendar years and two particular grade levels in which there were very large increases. These calendar years coincide with two key education reforms in Queensland in addition to the extension of principals' power, indicating that the move to extend principals' disciplinary powers interacted with other major education reforms occurring within that same period. Grade level patterns indicate that education policy and school environments may play a role in rising school suspension rates.

Imasaka, T., Lee, P. L., Anderson, A., Wong, C. W. R., Moore, D. W., Furlonger, B., & Bussaca, M. (2020). **Improving Compliance in Primary School Students with Autism Spectrum Disorder**. *Journal of Behavioral Education*, *29*(4), 763-786. https://doi.org/10.1007/s10864-019-09346-5
Complying with common instructions is considered an important skill, critical to school success; however, students with autism spectrum disorder (ASD) often exhibit low levels of compliance creating barriers to their inclusion in regular general education school settings. While self-management interventions have the potential to address compliance issues, there has been little research investigating their effectiveness in regular education school settings that include young children with ASD. Accordingly, the present study examined the effects of a self-management intervention for two 8-year-old boys with ASD and attention-deficit hyperactivity disorder. A multiple-baseline across settings design was used. Results indicated that the intervention was associated with increased rates of compliance and concomitant increases in on-task behavior for both participants within their respective classroom. Effects were maintained at follow-up, and social validity ratings suggested that the intervention was highly acceptable for both the students and their teachers. This study contributes to the knowledge base on effective and feasible interventions to support the inclusion of children with ASD in general education settings.

Jarraud, F. (2020a, novembre 9). **Quelle politique d'éducation pour Joe Biden ?** Consulté 9 novembre 2020, à l'adresse Le café pédagogique website: http://www.cafepedagogique.net/LEXPRESSO/Pages/2020/11/09112020Article637405036056184999.aspx?actId=ebwp0YMB8s1_OGEGSsDRkNUcvuQDVN7aFZ1E4yS5hsZMczVe0oRbhmAPNiXrAmaf&actCampaignType=CAMPAIGN_MAIL&actSource=505543

L'arrivée au pouvoir de Joe Biden, le futur président des Etat-UNis qui entrera en fonction en janvier 2021, devrait avoir un impact sur l'éducation. Le président élu devrait trancher dans des questions éducatives qui font débat ici aussi.

Jarraud, F. (2020b, novembre 13). **Blanquer et l'équité en éducation : Leçon européenne**. Consulté 13 novembre 2020, à l'adresse Le café pédagogique website: http://www.cafepedagogique.net/lexpresso/Pages/2020/11/13112020Article637408483185415458.aspx?actId=ebwp0YMB8s1_OGEGSsDRkNUcvuQDVN7aFZ1E4yS5hsZMczVe0oRbhmAPNiXrAmaf&actCampaignType=CAMPAIGN_MAIL&actSource=505629
La France aggrave t-elle les inégalités scolaires ou les réduit-elle ? Comment évaluer l'équité des systèmes éducatifs ? La Commission européenne vient de publier un ouvrage qui aborde de nombreux critères d'organisation des systèmes éducatifs au regard de l'équité. C'est assez éclairant pour la France où on repère mieux comment certaines réformes qui vont dans le sens de l'accroissement des inégalités.

Kangas, S. E. N., & Cook, M. (2020). **Academic Tracking of English Learners With Disabilities in Middle School**. *American Educational Research Journal*, *57*(6), 2415-2449. https://doi.org/10.3102/0002831220915702
Despite increased attention to the academic progress of English learners (ELs) with disabilities as a result of the Every Student Succeeds Act of 2015, research has yet to investigate the educational opportunities of these students in secondary grades. This qualitative embedded case study examined the curricular access of 10 ELs with disabilities in middle school. Utilizing deficit thinking for its theoretical underpinnings, the analysis illuminated that ELs with disabilities were consistently placed in lower academic tracks through a number of mutually reinforcing institutional and perceptual factors. The findings have exigent implications for expanding opportunities to learn of ELs with disabilities through reform to placement criteria and provision of special education and linguistic support across a range of academic tracks.

Kuyini, A. B., Desai, I. (Ishwar), & Sharma, U. (2020). **Teachers' self-efficacy beliefs, attitudes and concerns about implementing inclusive education in Ghana**. *International Journal of Inclusive Education*, *24*(14), 1509-1526. https://doi.org/10.1080/13603116.2018.1544298
This study explored teacher self-efficacy, attitudes and concerns about implementing inclusive education in Ghana, using a four-part survey questionnaire comprising Teachers' Background Information, Self-Efficacy About Inclusive Education, Attitudes Toward Inclusive Education and Concerns About Inclusive Education. Data obtained from 134 primary school teachers in two regions were analysed using Descriptive statistics, t-Tests, ANOVA and Correlation procedures. The results indicate that Ghanaian teachers in the study have concerns about inclusive education, less positive attitudes and also have moderate levels of self-efficacy about implementing inclusive education. These findings have implications for sustaining inclusive education and are discussed in relation to contextual variables and student demands.

Malebese, M. L., & Tlali, M. F. (2020). **Teaching of English first additional language in rural learning environments: a case for problem-based learning**. *International Journal of Inclusive Education*, *24*(14), 1540-1551. https://doi.org/10.1080/13603116.2018.1544300
The teaching of second language that is also a language of teaching and learning of other subjects, has to be meticulous. Considerate attention is utmost where this teaching occurs in under-resourced learning environments where learners encounter the second

language for the first time. In instances where the teaching was inadequate, as in the project reported about here, learners performed below expected standards. The project was a one-teacher public primary farm school situated in a remote privately owned land. The school was under-resourced with extremely limited support from the community (farm) and the department of education. The teacher taught all the subjects to the 10 grade 4 learners who were the focus in this project. The project aimed to help improve grade 4 learners' performance in English First Additional Language (second language) on a sustainable basis, by using problem-based learning. The project was framed on underpinnings of socially inclusive teaching strategy and adopted the principles of participatory action research as an approach to generate data. Critical discourse analysis was pivotal for analysing the data. With project-based learning, it was found that learners participated actively in their learning and the ultimate result was learners' performance improvement in English First Additional Language.

MASSOU, L., & PAPI, C. (2020). **Des ressources aux pratiques éducatives libres : quelle réappropriation dans la formation ouverte et à distance ? Dossier**. *Distances et médiations des savoirs*, (31). Consulté à l'adresse https://journals.openedition.org/dms/5251
C'est dans la double problématique de la réappropriation des ressources éducatives libres (REL) en formation ouverte et à distance et du passage éventuel des ressources aux pratiques éducatives libres, que s'inscrivent les articles, témoignages et notes de lecture de ce dossier à l'ancrage international. Les REL collaboratives pour une formation hybride des enseignants, l'impact des REL sur l'enseignement des langues à distance et en ligne, repenser l'éducation avec le numérique pour en améliorer la qualité...Voici quelques questions abordées.

Ministry of education and training, Ministry of education and culture, CIMEA : Information Centre on Academic mobility and equivalence, EUA : Association européenne des universités, & ENQA: European association for quality assurance in higher education. (2020). ***European project MICROBOL : Micro-credentials linked to the Bologna : key commitments : desk research report***. Consulté à l'adresse https://microcredentials.eu/wp-content/uploads/sites/20/2020/09/MICROBOL-Desk-Research-Report.pdf
Les micro-certifications sont devenues une priorité de la politique éducative européenne. Le projet Erasmus+ MICROBOL a pour objectif d'ici 2022 d'amener les ministères et autres parties prenantes du Processus de Bologne à explorer comment les outils existants de l'Espace européen de l'enseignement supérieur pourront être adaptés aux micro-certifications. Trois groupes de travail ont été constitués : sur les cadres de certifications et crédits ECTS, sur la reconnaissance et sur l'assurance qualité. Le résultat attendu du projet est la création d'un cadre européen pour les micro-certifications. Élaboré dans le cadre de ce projet, ce rapport examine le statut des micro-certifications en tant que moyen d'augmenter l'efficacité de l'enseignement supérieur.

MOITUS, S., WEIMER, L., & VÄLIMAA, J. (2020). ***Flexible learning pathways in higher education: Finland's country case study for the IIEP-UNESCO SDG4 project in 2018–2021***. Consulté à l'adresse https://karvi.fi/app/uploads/2020/09/KARVI_1220.pdf
Les parcours d'apprentissage flexibles remodèlent la façon dont les étudiants étudient, le lieu et le moment où ils le font. En Finlande, ce phénomène a pris de l'ampleur au cours de la dernière décennie. Ce rapport dresse un tableau du parcours des étudiants

en Finlande pour entrer, suivre et sortir de l'enseignement supérieur avec plus de facilité et de possibilités. Dans le cadre du projet de recherche de l'IIPE-UNESCO « ODD 4 : planification de parcours d'apprentissage flexibles dans l'enseignement supérieur », il propose des recommandations politiques fondées sur des données probantes visant à améliorer l'expérience d'apprentissage de tous les étudiants et à combler les écarts en matière d'équité.

Muñoz Martínez, Y., & Porter, G. L. (2020). **Planning for all students: promoting inclusive instruction**. *International Journal of Inclusive Education*, *24*(14), 1552-1567. https://doi.org/10.1080/13603116.2018.1544301
In this paper, we will analyze the inclusive education policies and practices of a Province in Canada. Qualitative methods were used to analyze the planning of teaching and learning for students, with a focus on those with a Personalized Learning Plan (PLP). The process involved extended school and classroom observation, completion of questionnaires and analysis of documents, including lesson plans, individual student records, and PLPs of specific students. An observation grid and questionnaires were designed ad hoc. This province was an early adopter of an inclusive educational model. Schools in the province have a long tradition of developing accommodations for individual students in a 'common learning environment'. In this article, we analyze learning and curriculum planning and its influence on the development of inclusive practices in the classroom. We found that teachers continue to struggle to develop effective individual learning plans. Our analysis leads us to suggest a model for teachers to conceptualise appropriate strategies and accommodations for students in their daily lesson plans.

Ngo Melha, E. A. (2020). ***Inclusion scolaire des élèves en situation de handicap en France et au Cameroun***. Consulté à l'adresse https://www.editions-harmattan.fr/index_harmattan.asp?navig=catalogue&obj=livre&isbn=9782343211367&utm_source=phplist&utm_campaign=message_30220&utm_medium=email&utm_content=lienTitre
L'objectif principal de cet ouvrage est de faire une analyse, dans une perspective comparative, de la politique éducative de l'inclusion scolaire relative aux enfants handicapés en France et au Cameroun à partir des points de vue des enseignants. Comment les enseignants perçoivent-ils l'inclusion des élèves handicapés ? Les résultats révèlent des différences significatives entre les deux pays mais aussi des points de similitude. Cette recherche, en s'intéressant aux facteurs qui, selon les enseignants, déterminent l'efficacité de l'inclusion scolaire des enfants en situation de handicap, apporte une aide à l'élaboration et la mise en oeuvre de la politique éducative de l'inclusion.

PASCAL, C., BERTRAM, T., & COLE-ALBÄCK, A. (2020). ***Early years workforce review: Revisiting the Nutbrown review: policy and impact***. Consulté à l'adresse https://www.suttontrust.com/wp-content/uploads/2020/08/Early_Years_Workforce_Review_.pdf
Il est maintenant bien établi que des praticiens bien qualifiés sont un élément clé d'une éducation et d'un accueil de la petite enfance de haute qualité, en particulier pour les enfants de familles à faible revenu et à risque. Ce rapport examine les progrès accomplis par rapport aux recommandations de « Nutbrown » de 2012 sur le renforcement des qualifications du personnel de la petite enfance au Royaume-Uni. Des preuves récentes

indiquent que la crise du recrutement s'est aggravée ces dernières années. La création de nouvelles qualifications n'a pas conduit à une augmentation du recrutement de personnel plus qualifié dans le secteur. Il y a un taux élevé de rotation du personnel, principalement en raison des bas salaires et du manque d'attractivité des carrières.

Perez-Roux, T., & Maleyrot, É. (2020). **Processus de mise en œuvre de la réforme des études en masso-kinésithérapie par une équipe de direction : entre traduction, dynamiques d'innovation et enrôlement des formateurs**. *Recherches en éducation*, (42). https://doi.org/10.4000/ree.1408
Ces dix dernières années en France, dans le champ de la santé, les différentes professions paramédicales ont vécu une réforme des études engageant une réingénierie de la formation. La contribution présente une étude qualitative qui vise à mettre au jour le processus de traduction de la réforme des études en masso-kinésithérapie (2015), par une équipe de direction, au sein d'un institut de formation. La réingénierie opérée par cette direction est étudiée sur la temporalité des quatre premières années post réforme (2015-2019). L'analyse de ce processus est réalisée à partir d'un cadre conceptuel qui prend en compte les enjeux de professionnalisation et les dispositifs de formation, choisis dans une dynamique d'innovation. Par ailleurs, les phénomènes de leadership sont interrogés. Les résultats font état d'un processus complexe. Pour la direction, il s'agit d'abord de concevoir de nouveaux dispositifs réflexifs puis de mobiliser les formateurs afin qu'ils s'engagent dans les démarches attendues. Le leadership développé donne à voir les décalages et les évolutions générés par un tel projet. Un certain nombre de tensions liées aux dynamiques d'appropriation des formateurs sont repérées. Enfin, les résultats indiquent dans quelle mesure la direction met en perspective de nouveaux chantiers, dans un processus d'innovation et de prospection qui nécessite une appropriation par les acteurs.

Power, S., Frandji, D., & Vitale, P. (2020). **The cultural making of the citizen: a comparative analysis of school students' civic and political participation in France and Wales**. *Compare: A Journal of Comparative and International Education*, *0*(0), 1-15. https://doi.org/10.1080/03057925.2020.1740081
This paper examines the complex relationship between the state, civil society and education through comparative research with young people in France and the UK. Survey data derived from two cohorts of school students in South Wales and Lyon reveal strong differences in their levels of civic and political participation. While our Welsh students have higher levels of 'civic participation', as measured in terms of charitable work and volunteering, our French students have far higher levels of what might be considered 'political engagement', defined in terms of campaigning and demonstrating. We argue that these differences can be accounted for by the different cultural repertoires and priorities of citizenship education which themselves reflect the contrasting historical configurations of education, the state and civil society in these two countries.

PRUVOT, E. B., ESTERMANN, T., KUPRIYANOVA, V., STOYANOVA, H., & BENNETOT PRUVOT, E. (2020). ***Public funding observatory 2020/2021: part 1: Financial and economic impact of the Covid-19 crisis on universities in Europe***. Consulté à l'adresse https://www.eua.eu/downloads/publications/pfo%2020%2021%20part%201.pdf
Ce rapport fournit une image détaillée de l'impact immédiat de la pandémie de COVID-19 sur le financement des universités en Europe et donne un aperçu des conséquences

pour l'avenir. Il se termine par 10 messages clés et une série de recommandations à destination des universités et des décideurs sur la manière d'atténuer les effets négatifs de la crise et de transformer les défis en opportunités. Le rapport est le premier d'une étude phare de l'EUA, l'Observatoire du financement public 2020/2021, et contient des données provenant de 29 systèmes d'enseignement supérieur en Europe.

Sirois, G. (2020). ***Estimation des besoins d'enseignants et données du sondage*** (p. 70). Consulté à l'adresse Université du Québec en Abitibi-Témiscamingue website: https://www.uqat.ca/telechargements/2020/GRAVE_Rapport-preliminaire-sondage_Aut2020.pdf
Le présent rapport préliminaire fait état des prévisions réalisées quant aux besoins d'enseignants d'ici 2030 dans les centres de services scolaires (CSS) de l'Abitibi-Témiscamingue et du Nord-du-Québec, ainsi que des résultats du sondage mené auprès d'enseignants, de directions d'établissements, d'étudiants de l'enseignement supérieur.

UNESCO : Organisation des Nations unies pour l'éducation, la science et la culture, UNICEF : Fonds des Nations unies pour l'enfance, & Banque mondiale. (2020). ***What have we learnt? Overview of findings from a survey of ministries of education on national responses to COVID-19***. Paris: UNESCO : Organisation des Nations unies pour l'éducation, la science et la culture. http://tcg.uis.unesco.org/wp-content/uploads/sites/4/2020/10/National-Education-Responses-to-COVID-19-WEB-final_EN.pdf
Ce rapport examine les réponses des ministères l'éducation nationale à la COVID-19 dans près de 150 pays, notamment le soutien à l'apprentissage à distance pour les élèves, les parents et les enseignants, les plans de réouverture des écoles, les protocoles de santé et le financement. Les élèves des pays à faible revenu et à revenu intermédiaire inférieur ont déjà perdu près de quatre mois de scolarité depuis le début de la pandémie, contre six semaines dans les pays à revenu élevé. Presque tous les pays ont inclus l'apprentissage à distance dans leur réponse en matière d'éducation, sous la forme de plateformes en ligne, de programmes de télévision et de radio et de paquets à emporter chez soi. 9 pays sur 10 ont facilité l'accès à l'apprentissage en ligne.

Vanderpuye, I., Obosu, G. K., & Nishimuko, M. (2020). **Sustainability of inclusive education in Ghana: teachers' attitude, perception of resources needed and perception of possible impact on pupils**. *International Journal of Inclusive Education*, *24*(14), 1527-1539. https://doi.org/10.1080/13603116.2018.1544299
Using the descriptive survey design and a sample of 142 teachers from eight inclusive schools in Cape Coast Ghana, the study investigated teachers' attitude, their perception about resources they need for the effective implementation of inclusive education (IE) and the impact of IE on pupils. Descriptive and inferential statistics were used to analyse the data. Results showed that teachers have a relatively positive attitude towards IE, and indicated the resources needed for the successful implementation of IE. Furthermore, their perceptions of the impact of IE on pupils were positive. Additionally, there was a weak statistically significant positive correlation between teachers' attitude about IE and their perceptions about its impact on pupils. It was recommended among other things that to sustain the practice of IE, teacher needs must be met. These include sufficient TLMs, information about special needs and disabilities, training on how to effectively teach pupils with SEN, training on adapting instructional materials for pupils with SEN and

training on how to promote social interaction. Teachers need to be given, training and information on all aspects of IE.

VUORIKARI, R., VELICU, A., CHANDRON, S., CACHIA, R., & GIOIA, R. D. (2020). ***How families handled emergency remote schooling during the time of Covid lockdown in spring 2020: Summary of key findings from families with children in 11 European countries***. Consulté à l'adresse https://op.europa.eu/fr/publication-detail/-/publication/20a208c7-199a-11eb-b57e-01aa75ed71a1/language-en/format-PDF/source-168582890
Cette recherche donne un aperçu de la vie numérique des familles et de la scolarisation à distance dans 11 pays européens lors du confinement au printemps 2020. Elle se concentre sur les enfants de la fin de l'enseignement primaire et de l'enseignement secondaire (10-18 ans). En moyenne, les enfants ont déclaré consacrer environ la moitié de leur temps en ligne à des activités d'apprentissage. Presque tous les enfants ont pu mener certaines activités liées à l'école en utilisant les technologies numériques, et beaucoup ont déclaré que leurs écoles leur avaient fourni des plateformes de communication et d'apprentissage numérique. Les résultats mettent en évidence de grandes variations dans la manière dont les enfants ont pu interagir avec leurs enseignants.

ZHANG, W., & BRAY, M. (2020). **Comparative research on shadow education: Achievements, challenges, and the agenda ahead**. *European Journal of Education*, *55*(3), 322-341. https://doi.org/10.1111/ejed.12413
Cet article passe en revue les recherches menées depuis le début du siècle sur le soutien scolaire privé, connu sous le nom d'éducation de l'ombre. Au cours des deux premières décennies, la recherche sur l'éducation de l'ombre a apporté une prise de conscience des points communs et des différences dans les cultures. De la cartographie initiale et de l'identification des facteurs qui façonnent la demande sont nés des travaux sur les écosystèmes avec des analyses sociologiques et économiques approfondies, ainsi qu'une plus grande attention aux méthodes de recherche. Les auteurs suggèrent pour l'avenir une prise en compte de l'impact de la technologie, et recommandent une plus grande interdisciplinarité.

Pratiques enseignantes

Brunel, M., & Heiser, L. (2020). **Analyser les textes avec internet : étude d'une pratique professionnelle en transformation**. *Recherches en éducation*, (42). https://doi.org/10.4000/ree.1607
L'usage d'internet en classe est un sujet d'actualité au sein de l'institution scolaire. À travers une étude de cas, nous analysons un dispositif permettant aux élèves de puiser dans les ressources disponibles en ligne pour étudier les textes littéraires. Celui-ci s'appuie à la fois sur l'utilisation du numérique dans la classe et sur une pratique de l'analyse des textes reposant sur les recherches et propositions des élèves plutôt que sur les choix du professeur. Nous analysons comment la mise en œuvre de ce dispositif accentue certaines préoccupations de l'enseignant et, en étudiant comparativement deux entretiens menés au début et en fin d'expérimentation, nous cherchons à cerner certains signes d'appropriation. L'analyse établit que le processus repose notamment sur la manière dont l'enseignant parvient à mettre en relation ses habitudes avec les contraintes techniques et didactiques induites par le dispositif, mais aussi avec les

pratiques médiatiques numériques hétérogènes effectives des élèves. Ce cas tend à illustrer que l'introduction d'un dispositif didactique numérique exige un temps long d'appropriation et souligne la nécessité d'un enseignement explicite des compétences en littératie médiatique numérique reposant sur la prise en compte des pratiques informelles des élèves dans la classe.

Calafato, R. (2020). **Language teacher multilingualism in Norway and Russia: Identity and beliefs**. *European Journal of Education*, *55*(4), 602-617. https://doi.org/10.1111/ejed.12418
Multilingualism has witnessed growing interest as a subject of academic study and as a state to aspire to for many of the world's citizenry. In tandem with this growing interest, countries around the world have started to implement foreign language curricula at schools that seek to prepare the coming generations to thrive in an increasingly multilingual global environment. In this respect, language teachers are likely to play a pivotal role in promoting the learning of multiple languages among students, with their beliefs about multilingualism informing their practices. This study reports on the beliefs of 460 secondary school teachers of English, French, German, Spanish, Italian, and Chinese in Norway and Russia regarding the benefits of being or becoming multilingual, the affordances of multilingual teachers, and the promotion of multilingualism in their respective countries. The findings indicated statistically significant differences between the participants based on the number of languages they taught and, to some extent, their country of residence. The observed differences hold important implications for teacher education programs and initiatives promoting the use of multilingualism as a resource in language education.

Cariveau, T., La Cruz Montilla, A., Ball, S., & Gonzalez, E. (2020). **A Preliminary Analysis of Equivalence-Based Instruction to Train Instructors to Implement Discrete Trial Teaching**. *Journal of Behavioral Education*, *29*(4), 787-805. https://doi.org/10.1007/s10864-019-09348-3
Methods to efficiently train instructors to implement evidence-based procedures with children diagnosed with developmental disabilities have been a prominent interest in educational and clinical settings. Behavioral skills training (BST) is frequently recommended and includes four components beginning with instruction. In most studies, the instruction component consists of giving the trainee the protocol for the procedure later to be trained. Recently, researchers have included more robust instructional components, which have produced acquisition without requiring the additional components of BST. The current study evaluated the use of equivalence-based instruction with embedded modeling to teach four instructors to implement discrete trial teaching. All instructors emitted class-consistent responding to untrained relations following equivalence-based instruction, and two participants demonstrated high levels of fidelity on discrete trial teaching probes. The remaining participants required a brief, three-trial model of DTT before mastery was observed on these probes. Our findings suggest that including a more robust instruction during BST may increase the efficiency of training instructors to conduct discrete trial teaching.

Dang-Ngoc, T.-T. (2020). **Identifier les liens entre les passeurs de savoirs pour un écosystème apprenant**. *Journées d'étude AIPU section France : les passeurs de la Pédagogie Universitaire dans les projets de transformation pédagogique*. Présenté à Toulouse, France. Consulté à l'adresse https://hal.archives-ouvertes.fr/hal-02990269

Deltand, M., Duchesne, C., Masdonati, J., & Perez-Roux, T. (2020). **Édito – Diversité des processus de traduction dans des champs de pratiques professionnelles et sociales**. *Recherches en éducation*, (42). Consulté à l'adresse http://journals.openedition.org/ree/1379
Quand on use de vocables tels que changement, mutation, bouleversement, transformation ou même innovation, il ne faudrait pas oublier que chacun d'eux a une résonnance distincte et particulière dans les champs de pratiques auxquels ils se rapportent (économique, politique, santé, social, éducatif, etc.). Les différences de signification qu'ils véhiculent sont le fruit d'une évolution idéologique propre à chaque civilisation. Elles influencent inévitablement les modes de traduction des acteurs...

Fawley, K. D., Stokes, T. F., Rainear, C. A., Rossi, J. L., & Budd, K. S. (2020). **Universal TCIT Improves Teacher–Child Interactions and Management of Child Behavior**. *Journal of Behavioral Education*, *29*(4), 635-656. https://doi.org/10.1007/s10864-019-09337-6
One avenue for improving children's socio-emotional competence and classroom behavior is by improving the quality of early teacher–child interactions. Universal Teacher–Child Interaction Training (TCIT-U), adapted from Parent Child Interaction Therapy, is a school-based prevention program in which teachers are taught to use the principles of learning and behavior management in the classroom to increase positive interactions and to reduce problem behaviors in young children. The current study advanced prior research by investigating TCIT-U's effectiveness with English language learners and in a rural public school setting. We examined the direct effects on teachers' and children's observed behavior, and the durability of teachers' skill use in the next school year. In the present study, changes in teacher and child behavior were analyzed within a multiple baseline design across two classrooms with five teachers and 39 preschool children. Teacher and child behavior were measured through behavioral observations and a standardized teacher rating scale. Results revealed that teachers increased their use of positive attention and behavior management skills with intervention, and these changes remained stable during follow-up. Further, improvements in children's behavior were detected by significant changes in post-TCIT teacher ratings on a strengths-based measure. Observed disruptive behavior displayed decreasing trends during intervention for children nominated by their teachers as having behavioral concerns, although the overlap and variability in the data limited convincing evidence of an intervention effect. Finally, teachers reported high satisfaction with the program. This study supports TCIT-U's use as an intervention to increase positive interactions between teachers and students and as a universal prevention program for behavior problems in preschool classrooms.

Forget, M.-H. (2020). **Sur quels savoirs des stagiaires en enseignement du français au secondaire appuient-ils leurs choix didactiques?** *Formation et profession*, *28*(2), 35. https://doi.org/10.18162/fp.2020.542

Frank, K. A., Kim, J., Salloum, S. J., Bieda, K. N., & Youngs, P. (2020). **From Interpretation to Instructional Practice: A Network Study of Early-Career Teachers' Sensemaking in the Era of Accountability Pressures and Common Core State Standards**. *American Educational Research Journal*, *57*(6), 2293-2338. https://doi.org/10.3102/0002831220911065
Accountability pressures and the Common Core State Standards for Mathematics have created complex demands for educators, especially early-career teachers (ECTs).

Analyzing longitudinal data, including the social networks of 119 ECTs, we find that ECTs increase their ambitious mathematics instruction when their network members positively interpret accountability pressures and curricular standards as manifest in standardized tests and evaluation. This estimated effect is net of an ECT's rich covariates, including the levels of ambitious mathematics instruction at the beginning of the academic year. It is implied that not all ECTs experience accountability pressures and curricular standards in the same way—their experiences are affected by the immediate networks in which they are embedded. Corresponding guidance for teacher educators and administrators is given.

Heiser, L., Romero, M., De Smet, C., & Faller, C. (2020). **Conception d'activités technocréatives pour le développement d'une pédagogie créative**. *Formation et profession*, *28*(2), 51. https://doi.org/10.18162/fp.2020.547

Kraft, M. A., & Hill, H. C. (2020). **Developing Ambitious Mathematics Instruction Through Web-Based Coaching: A Randomized Field Trial**. *American Educational Research Journal*, *57*(6), 2378-2414. https://doi.org/10.3102/0002831220916840
This article describes and evaluates a web-based coaching program designed to support teachers in implementing Common Core–aligned math instruction. Web-based coaching programs can be operated at relatively lower costs, are scalable, and make it more feasible to pair teachers with coaches who have expertise in their content area and grade level. Results from our randomized field trial document sizable and sustained effects on both teachers' ability to analyze instruction and on their instructional practice, as measured by the Mathematical Quality of Instruction instrument and student surveys. However, these improvements in instruction did not result in corresponding increases in math test scores as measured by state standardized tests or interim assessments. We discuss several possible explanations for this pattern of results.

Lafont, P., & Cavaco, C. (Éd.). (2020). ***Les défis de l'évaluation dans les pratiques de reconnaissance et de validation des acquis de l'expérience (RVAE)***. Consulté à l'adresse https://www.editions-harmattan.fr/index_harmattan.asp?navig=catalogue&obj=livre&isbn=9782343208282&utm_source=phplist&utm_campaign=message_30220&utm_medium=email&utm_content=lienTitre
Le processus de reconnaissance et de validation des acquis de l´expérience a fait émerger des pratiques nouvelles d´évaluation, étayées par des méthodologies et des outils innovants. Ce numéro de Chemins de formation a pour finalité d'appréhender l'origine de ces défis et leur traduction dans la détermination des actions produites et induites par les acteurs concernés, à partir de recherches scientifiques développées dans le champ des sciences de l´éducation dans divers pays d´Europe (France, Portugal, Suisse, Belgique, Irlande).

Lopez Lopez, A. L. (2020). ***L'engagement scolaire des élèves à risque et le rôle du soutien de leurs enseignants dans la prévention de leur décrochage scolaire***. http://hdl.handle.net/11143/17161
Dans une perspective orientée vers la prévention du décrochage scolaire, cette thèse par articles examine l'engagement scolaire des élèves du secondaire et le rôle exercé par le soutien reçu de leurs enseignants, à partir de trois objectifs de recherche, soit : (1) dresser le portrait actuel des connaissances empiriques sur les facteurs influençant les

fluctuations dans l'engagement scolaire des élèves au cours de leur secondaire; (2) identifier les caractéristiques de l'engagement affectif et cognitif qui différencient les élèves du secondaire considérés à risque de décrochage scolaire de leurs pairs non à risque; et (3) fournir une compréhension approfondie du rôle joué par le soutien de la part des enseignants, tel que perçu par les élèves à risque, dans le développement de leur engagement scolaire. Les résultats de chacun des objectifs de recherche de notre étude sont présentés sous forme d'articles scientifiques et ils sont mis en relation et discutés dans la section de la discussion de cette thèse. Le premier article scientifique produit dans le cadre de la présente thèse « Fluctuations dans l'engagement scolaire de l'élève du secondaire : un portrait actuel des connaissances » répond au premier objectif de recherche et dresse l'état des connaissances empiriques sur les facteurs influençant les fluctuations dans l'engagement scolaire des élèves pendant leur secondaire. Le deuxième article : «Différences dans l'engagement affectif et cognitif entre les élèves à risque de décrochage scolaire et leurs pairs non à risque » présente les résultats de l'analyse discriminante et répond au deuxième objectif de recherche de la présente thèse. Le troisième article « L'expérience de soutien à l'engagement scolaire chez les élèves à risque de décrochage scolaire » présente les résultats de l'analyse qualitative à l'aide des catégories conceptualisantes et répond au troisième objectif de recherche de cette thèse. Les résultats de cette étude doctorale apportent de nouveaux éléments aux plans théorique et empirique qui contribuent à l'avancement des connaissances dans le domaine de l'intervention éducative et de la réussite scolaire.

Martel, L. (2020). ***Étude de pratiques de directrices et de directeurs d'école et de certains de leurs fondements***. http://hdl.handle.net/11143/17249
Bien que nombre de recherches se soient penchées sur les pratiques des directrices et des directeurs d'école, aucune ne s'est intéressée aux fondements de celles-ci, à savoir les intentions et les représentations qui sous-tendent ces pratiques, et sur les incidences du contexte particulier de la mise en œuvre d'une gestion axée sur les résultats au Québec. Cette thèse a donc pour objectif général d'étudier les pratiques de directrices et de directeurs d'école primaire à l'égard des enseignantes et des enseignants ayant pour but de favoriser la réussite, et plus spécifiquement, leur mise en œuvre, la distinction des intentions et le dévoilement des représentations qui les sous-tendent. Pour ce faire, l'approche de recherche retenue est qualitative et peut également être qualifiée de descriptive vu son but qui est de décrire un phénomène et sa méthode de collecte de données qui consiste à décrire des données organisées autour de thèmes déterminés. Les participantes et les participants de cette recherche sont des directrices et des directeurs d'école primaire d'un même centre de services scolaire francophone qui compte plus de 10 000 élèves. Les participantes et les participants ont été sélectionnés en fonction de deux critères, à savoir diriger une école primaire où la réussite s'est améliorée au cours de leur mandat et être volontaire pour participer à la recherche. La méthode d'échantillonnage retenue est intentionnelle et non probabiliste. Au terme de la démarche de recrutement, 18 directrices et directeurs ont accepté de participer à une entrevue semi-dirigée individuelle. L'identification et la description des pratiques et des stratégies mises en œuvre par les directrices et les directeurs d'école a permis de constater que l'analyse de la situation, la formulation des objectifs, la connaissance du milieu et du contexte, la collecte et l'analyse des données pour identifier les besoins, les échanges avec le personnel enseignant sur les objectifs lors de réunions, la prise en compte des résultats pour prendre les décisions relatives aux activités pédagogiques et/ou aux services aux élèves, la demande de soutien pour coordonner l'enseignement,

la participation au travail d'équipe, les rencontres individuelles du personnel enseignant au sujet de leurs élèves de même que l'utilisation des résultats pour apprécier le degré d'atteinte des objectifs d'amélioration sont partagées par l'ensemble des participantes et des participants. Dans le même sens, toutes les directrices et tous les directeurs d'école rencontrés en entrevue ont mentionné avoir les intentions suivantes : donner la direction et mobiliser l'équipe-école, favoriser la réussite, accompagner, collaborer et influencer. Enfin, au sujet du dévoilement des représentations des directrices et des directeurs d'école, plusieurs éléments se rapportant aux interprétations, aux émotions, aux croyances, aux valeurs et aux attitudes ont été évoqués en lien avec des valeurs humaines ou professionnelles. Les conclusions qu'il est possible de tirer de cette recherche au regard des résultats obtenus sont à l'effet que celle-ci a permis de valider et d'enrichir le modèle d'Hallinger à différents niveaux. Que ce soit par la description plus fine ou l'identification de pratiques supplémentaires à celles déjà recensées, la distinction d'intentions à caractère pédagogique ou administratif ajoutant aux dimensions proposées ou encore en levant le voile sur des représentations associées à des valeurs de nature humaine ou professionnelle, tous les résultats contribuent à l'avancement des connaissances sur les pratiques des directrices et des directeurs d'école.

Miočić, I., Vuković, M. B., & Ledić, J. (2020). **The positive attitude approach for teaching in higher education: An untrodden path for policy and practice**. *European Journal of Education*, *55*(4), 560-572. https://doi.org/10.1111/ejed.12420
This article reports on a study in which a new conceptual framework for fostering a positive attitude towards teaching in higher education (PATTHE) was developed. The PATTHE framework builds on a holistic four-dimensional theoretical concept and is not limited by the specificity of teaching within a particular discipline or national higher education context. The four dimensions of PATTHE pertain to (a) emotional dimension, (b) professional development, (c) constructivist approaches to teaching, and (d) the teaching and research nexus; all of which are relevant for empowering quality teaching at personal, institutional and/or national higher education policy levels. The purpose of our study was to test and analyse this conceptual framework. Creative qualitative research methods were used including identification of keywords, evoking participant opinions through visual materials, reactions to vignettes, and by documenting discussions regarding the proposed PATTHE conceptual framework. A purposive and critically informed approach was used for the selection of twelve higher education experts as research participants. Responses from the selected education developers were collected through an online protocol system. Research results revealed that participant reflections on a positive attitude towards teaching showed a high level of agreement with the proposed conceptual framework; the proposed theoretical concept is thereby deemed well-constructed and acceptable with minimal extensions.

Muller Mirza, N., & Albanèse, O. (2020). **Les pratiques de bénévoles auprès d'enfants migrants en difficulté scolaire : un système d'activité sous tension**. *Recherches en éducation*, (42). https://doi.org/10.4000/ree.1496
Aujourd'hui le bénévolat représente un domaine d'activité dynamique dans les sociétés européennes et joue un rôle important notamment auprès de populations en situation de vulnérabilité. Il occupe à cet égard une place à la fois en marge et en interaction avec les instances étatiques, et se trouve au cœur de tensions entre travail rémunéré et don de soi. Dans cet article, en adoptant une approche socioculturelle, nous présentons

les résultats d'une étude qui visait à mieux comprendre le « travail bénévole » du point de vue des acteurs : comment les individus donnent-ils sens à un travail qui se présente généralement comme peu prescrit ? Quel type d'activité « réelle » mettent-ils en œuvre ? L'étude a porté sur des bénévoles engagés dans un collectif d'une ville de Suisse francophone, orienté vers le soutien scolaire d'enfants issus de la migration en difficulté à l'école. En articulant logiques singulières et logiques collectives, nous examinons la façon dont les personnes déploient les pratiques concrètes qui constituent leur « travail » et comment elles traduisent les contraintes des différents systèmes d'activité dans lesquels elles prennent place. À partir de l'analyse d'entretiens, nous montrons que les pratiques des bénévoles se trouvent au cœur de tensions qui relèvent de dynamiques identitaires mais aussi politiques.

Perron, S., Hasni, A., & Boilevin, J.-M. (2020). **L'absence de savoir conceptuel lors de démarches d'investigation scientifique mises en œuvre en classe : une crainte devenue réalité ?** *Recherches en éducation*, (42). https://doi.org/10.4000/ree.1643
Les démarches d'investigation scientifique sont recommandées à la fois dans les textes institutionnels et dans la documentation scientifique. Dans cette recherche, nous étudions la manière avec laquelle des enseignants français articulent les démarches d'investigation scientifique (DIS) avec les savoirs conceptuels en sciences de la vie et de la Terre. Notre travail repose sur deux construits : les démarches d'investigation scientifique et les savoirs conceptuels. La méthode de recueil des données correspondant aux pratiques d'enseignement déclarées s'appuie sur une recherche mixte de nature descriptive. Nos résultats permettent de souligner, entre autres, l'absence de visée d'apprentissage associée aux savoirs conceptuels lors de mises en œuvre de DIS en classe. Ce sont surtout les habiletés et les attitudes composant les DIS qui sont priorisées de manière dissociée de la conceptualisation.

Pyle, A., DeLuca, C., Danniels, E., & Wickstrom, H. (2020). **A Model for Assessment in Play-Based Kindergarten Education**. *American Educational Research Journal*, *57*(6), 2251-2292. https://doi.org/10.3102/0002831220908800
Kindergarten teachers face the challenge of integrating contemporary assessment practices with play-based pedagogy. The current study addresses this challenge by presenting a kindergarten assessment framework rooted in theory and current classroom practices, based on teacher interview and observational data collected in 20 kindergarten classrooms. Ten teachers subsequently participated in extended observations and video elicitation interviews. Results uncovered seven different assessment pathways by which teachers mobilized learning goals through play pedagogies and assessment. Based on these pathways, a comprehensive assessment framework was developed underscoring the cyclical relation between student learning goals, types of play, and assessment contexts and practices. This framework supports teachers' negotiation and integration of assessment practices with play-based pedagogies to promote both academic and developmental learning goals.

Verdun, V. R., Chiasson, B. A., & Fienup, D. M. (2020). **At the Intersection of Derived Relations and Observational Learning: Teaching Fraction–Percentage Relations**. *Journal of Behavioral Education*, *29*(4), 741-762. https://doi.org/10.1007/s10864-019-09343-8
Little research has examined the intersection of derived relations and observational learning, which may be an avenue by which an instructor can increase the total amount of learning while conserving instructional resources. In this study, we investigated this

intersection in the context of teaching third-grade students fraction–pictogram–percentages equivalence classes. We taught participants two baseline relations and observed the emergence of all possible derived relations. Prior to training, the participants could sort percentage stimuli from least to greatest (comparative relations), but could not do this with fraction stimuli. Following the formation of equivalence classes, the participants could accurately sort fraction stimuli, thus demonstrating the transfer of function. Two additional participants observed the target participants undergo the training of baseline relations. The observing participants acquired baseline relations with no direct reinforcement, derived all relations, and demonstrated transfer of function. These findings suggest a novel way to incorporate equivalence-based instruction into classroom settings.

VUORIKARI, R., PUNIE, Y., & GIRALDEZ, M. C. (2020). ***Emerging technologies and the teaching profession***. Consulté à l'adresse https://publications.jrc.ec.europa.eu/repository/bitstream/JRC120183/emerging_technologies_teaching_profession_jrc.pdf
Les technologies émergentes d'aujourd'hui auront-elles un impact sur la profession enseignante à l'avenir ? Quelles parties des tâches d'enseignement ou des processus d'apprentissage pourraient être remplacées, améliorées et transformées par l'automatisation, les algorithmes et les machines ? Le rapport propose huit scénarios tournés vers l'avenir. Ces scénarios pour un futur proche visent à résoudre un certain nombre de problèmes qui, selon les éducateurs d'aujourd'hui, les empêchent de dispenser une éducation et une formation de qualité. Les principaux défis émergeant des scénarios concernent des considérations éthiques et l'évolution des compétences des professionnels de l'enseignement.

Relation formation-emploi

Bryson, A., Stokes, L., & Wilkinson, D. (2020). **Can Human Resource Management Improve Schools' Performance?** *Labour*, *34*(4), 427-440. https://doi.org/10.1111/labr.12178
Using data for British workplaces, we compare the associations between human resource management (HRM) practices and schools' performance, comparing those effects to the effects of HRM among private sector workplaces. We do so using measures of workplace performance that are common across all workplaces. We find intensive use of HRM practices is correlated with substantial improvement in workplace performance, both among schools and other workplaces. Results are robust to panel estimates of the correlation between changes in performance and changes in HRM.

Mitze, T., & Javakhishvili-Larsen, N. (2020). **Graduate Migration and Early-career Labor Market Outcomes: Do Education Programs and Qualification Levels Matter?** *Labour*, *34*(4), 477-503. https://doi.org/10.1111/labr.12177
This paper investigates the role that spatial mobility plays for early-career labor market outcomes across education programs and qualification levels. We use data for the full population of Danish graduates from upper (post-)secondary and tertiary education programs to estimate the labor market returns from migrating after graduation. Benchmark OLS estimates find positive correlations between migration, the employment probability, and entry wages. We further apply IV estimation with instruments constructed from exogenous push factors into migration at the individual, education institution, and

local labor market level. Results confirm a mobility premium for graduates from tertiary but not from vocational education programs.

Pavlin, S. (2020). **Who makes higher education graduates ready for work? The case of teacher education in Slovenia**. *European Journal of Education*, *55*(4), 489-500. https://doi.org/10.1111/ejed.12423
This paper starts by focusing on the problem of students' transition to working life in the domain of teacher education. Second, it problematises the teacher educator concept. Particular attention is paid to the question of which professionals regard themselves as teacher educators, and why. Third, it presents young teachers' acquisition of working experience and their transition from education to work in Slovenia as linked to three processes: practical and developmental work in schools during studies, traineeship period, and continuous professional learning. The general findings indicate that teacher education, training and professional development are all characterised by a sharp division between the role of academics (transmitters of theory), and senior teachers (facilitators of teachers' practical experiences). In our findings we demonstrate that young graduates lack a well-considered and integrated acquisition of practical experience as they move from education to the labour market. The paper is concluded with a call for better understanding the role of academics in preparing graduates for the world of work.

Schuss, E. (2020). **Do Ethnic Networks Ameliorate Education–Occupation Mismatch?** *Labour*, *34*(4), 441-476. https://doi.org/10.1111/labr.12183
The question to what extent ethnic networks affect occupational mismatch has so far been overlooked. This paper exploits supraregional variation in ethnic composition in Germany and shows that a one standard deviation increase in the share of the own ethnic group per zip code significantly reduces the years of overqualification for females, by 0.27 years. For males, neither the foreign share nor the ethnic share per residency area is found to significantly impact the extent of overqualification. Selection into residency groups and occupations and different endowments in language capital explain the more efficient benefit of ethnic networks accrued to females.

Réussite scolaire

KEFALLINOU, A. (2020). ***Prévenir l'échec scolaire : rapport de synthèse final***. Consulté à l'adresse https://www.european-agency.org/sites/default/files/PSF_Final_Summary_Report_FR.pdf
Que dit la littérature de recherche sur le lien entre la prévention de l'échec scolaire et les systèmes d'éducation inclusifs ? Comment les politiques des pays membres de l'Agence en matière d'éducation inclusive comprennent-elles et traitent-elles la prévention de l'échec scolaire par rapport aux questions portant sur le système dans son ensemble et aux apprenants individuels ? Quels sont les éléments et les cadres de la politique inclusive qui semblent nécessaires à la prévention de l'échec scolaire ? Ce rapport présente les conclusions du projet de l'Agence européenne pour l'éducation adaptée et inclusive intitulé « Prévenir l'échec scolaire : examen du potentiel des politiques d'éducation inclusive en relation avec le système et les individus ».

Lopez Lopez, A. L. (2020). ***L'engagement scolaire des élèves à risque et le rôle du soutien de leurs enseignants dans la prévention de leur décrochage scolaire***. http://hdl.handle.net/11143/17161
Dans une perspective orientée vers la prévention du décrochage scolaire, cette thèse par articles examine l'engagement scolaire des élèves du secondaire et le rôle exercé par le soutien reçu de leurs enseignants, à partir de trois objectifs de recherche, soit : (1) dresser le portrait actuel des connaissances empiriques sur les facteurs influençant les fluctuations dans l'engagement scolaire des élèves au cours de leur secondaire; (2) identifier les caractéristiques de l'engagement affectif et cognitif qui différencient les élèves du secondaire considérés à risque de décrochage scolaire de leurs pairs non à risque; et (3) fournir une compréhension approfondie du rôle joué par le soutien de la part des enseignants, tel que perçu par les élèves à risque, dans le développement de leur engagement scolaire. Les résultats de chacun des objectifs de recherche de notre étude sont présentés sous forme d'articles scientifiques et ils sont mis en relation et discutés dans la section de la discussion de cette thèse. Le premier article scientifique produit dans le cadre de la présente thèse « Fluctuations dans l'engagement scolaire de l'élève du secondaire : un portrait actuel des connaissances » répond au premier objectif de recherche et dresse l'état des connaissances empiriques sur les facteurs influençant les fluctuations dans l'engagement scolaire des élèves pendant leur secondaire. Le deuxième article : «Différences dans l'engagement affectif et cognitif entre les élèves à risque de décrochage scolaire et leurs pairs non à risque » présente les résultats de l'analyse discriminante et répond au deuxième objectif de recherche de la présente thèse. Le troisième article « L'expérience de soutien à l'engagement scolaire chez les élèves à risque de décrochage scolaire » présente les résultats de l'analyse qualitative à l'aide des catégories conceptualisantes et répond au troisième objectif de recherche de cette thèse. Les résultats de cette étude doctorale apportent de nouveaux éléments aux plans théorique et empirique qui contribuent à l'avancement des connaissances dans le domaine de l'intervention éducative et de la réussite scolaire.

Valeurs

Durand-Terreaux, M. (Éd.). (2020). ***L'enseignement moral à l'école : histoire d'une discipline singulière: Une contextualisation sociopolitique et éducative***. Consulté à l'adresse https://www.editions-harmattan.fr/livre-9782343212418?utm_source=phplist&utm_campaign=message_30220&utm_medium=email&utm_content=lienTitre
Comment écrire l'histoire scolaire de l'enseignement moral en mettant en relief le lien existant entre cette discipline et les enjeux pour l'individu et pour la société ? Dissocier la formation morale des écoliers du contexte sociopolitique est impossible. L'étude des textes législatifs et des instructions officielles permet de mettre en évidence des temps de rupture de l'enseignement moral au sein de l'école laïque rendant sa réintroduction contemporaine compliquée. Si l'enseignement moral et civique a repris une place officielle dans l'école depuis la loi d'orientation et de programmation pour la refondation de l'école de la République en 2013, elle doit continuer à être réajustée de manière éclairée pour contribuer à la construction d'une culture morale et civique favorable à la préservation des valeurs portées par la triade républicaine et au passage de témoin aux futures générations.