Title word cross-reference

3 [SLW10].

-D [SLW10].


2008 [DRT+12]. 280 [VT07a].

3-Year [HNMG16, BW10].
4 [HL07]. 415 [HL07].

5 [MF05, VT07a]. 522 [SYOL07]. 5e [GDSD10]. 5th [YnLL08].

6 [SWA+12].

7th [DE15].

8th [JLCT12, NCH11].

[CC05, Gil04]. **Authenticity** [Lil07]. authored [HBTP13]. Authors [Ano03b, Ano03c, Ano04a, Ano04b]. **autonomy** [BK13a]. **Availability** [WM17]. **Avoiding** [SBS+07]. **awareness** [CBDV10, Web13].


Canada-Wide [DRT+12]. Canadian [HY05]. Candidates [MWM05, Lee16a]. Capabilities [SD16]. capacity [AM14b]. Capital [CS16]. Career [KBK15, Ing14, Lee16a]. Careers [PD17, CPMSW11, DAO+11, KB16b, Uit14]. Case [AVM16, AD16, BC05, CW06, CT17, CC05, CABR06, Dog12, ERC03, HA07, KD09, LB08, McCo3, PN04, PB09, QVST17, Sty08, TM17, TSP16, VWH+17, VC17, AB14, BSA+14, Bay13, CdHD16, Cha10, CL10, DW15, EDS10, ELY15, Emo09, HFYW14, IK14, KYA13a, KYJS12, KK16, LH14, Mor09a, Mor09b, MPB10, OS10, Oo12, PZLR16, PV14, SY14, TOV12, TDBLY16, ZS11].


Chemical [Bil06, EG17, FMOMG16, SB17, TBP17, OdC15]. Chemistry [ÇAC07, CC05, Che08, CABR06, DC06, HCBZ03, HMS16, KD09, NPT17, QVST17, SB17, Su08, TLK17, AAMU+14, BSA+14, BPG11, BRMNH15, BS15, ÇAC09, CB+12, DMNH11, ETG16, GGSP10, KYA13a, KIR12, KKvdW15, LT11, MNE12, ME13, NY11, OD09, Top13, WP12]. chemistry-learning [BSA+14]. Childhood [TM17, Lee16a, TOV12].

Children [AVT16, Giv09, Hua17, KRT11, MF05, SB16, So03, SK17, VWH+17, WwLD+15, Bra12, BVDV13, Can14, Che11, Chi12b, Fer14, HPP09, HY05, LCC11b, SB14]. Chile [THV+15, TLHV16a, TLHV16b].

Chilean [GS16]. china [ZC15, JHWW16, WHC17, ZKS+05, ZF06]. Chinese [BVDV13, CW06, CJ17, CL10, CVCV11, Che11, HFHV14, JC10, JW15, Len06, LP11, LH16, MLK+15, HLS08, Ng10, RXLC16, ZBL+16, ZS11].


citation [TWC+16]. CiteSpace [TYW+17]. CK [OB15]. claims [AV06].

Class [MSdSGG17, CMME15, KYJS12, LLL15, MMZ09, SVME15, WT15]. Classes [BCC06, SCJ16, AE15, ETG16, EE11, EK09, GGSP10, MODBB12, SOTF13].

Classification [FMOMG16, YYC04]. Classroom [And03, BE16, Bla04, DKL16, Leu05, MHI09, MBBR08, MF05, HLS08, OS10, PP15, Sch14, SF05, SGHM15, SGHM16, TM17, TA15, VJ06].
WQNC17, AV06, Ale14, CK14, CL10, CYK+16, Fos15, GLY09, HL13, KTBG15, Lce11, Oh11, PDG15, Pap10, Pet13, QM14, RB13, SIS+11.

Classrooms [HNMG16, HNAA16, KFM+17, LFF03, MDT13, NPT17, O805, Sca16, SGHM15, SGHM16, SMZ06, WHHO8, AAF12, AH11, CCN+12, FG14, Kan11, LCC11b, NCH11, NRKR13, Oh10, PYR+12, SYOL05, SYOL07, SIS+11, TRF05]. Climate [HFVH17, BEF15, CK14, Pet13].


Cognition [CC05, LCA16]. Cognitive [LL14, Miy08, NHLS08, RXLC16, RV17, ST05, Bab10, BHMO14, CA14, CCWL15, Las13, LY13, SP15, TSP12].

Coherence [SV08, CL10].

Collaboration [CC16, EG17]. Collaborations [TSC17, Kot10]. Collaborative [WFPC04, KLJ+13, KB14, LCC+09].

College [BMD+17, CS16, CPMSW11, GS16, LL06, Mcg03, Sch14, Gok12, Lee16a, Liu09, PSC+13]. Colombian [AV06, MJMOR11]. Colour [MVC17b].

Combinatorial [TC09]. Combining [HLC+15, Cro09]. Comes [Kon13].

Coming [Mor09a, Mor09b]. Committed [KKE+17]. Commonality [TVC03]. Communicate [EDS10]. Communication [DFR06, Su08, CGG+11, CYK+16, HpCH+16, OO12, SLES09].


Comparison [MH17, PMSK+12, SB16, WBB17, YJY08, ZF06, AAMU+14, Bab10, Lin14a, Maj14, MLK+15, SBN14]. Comparisons [THV+15]. Competence [DJE17, KBH+15, NPT17, RH15, CGG+11, NFB+15, OdC15, Ped15].

Competences [KLH15]. Competencies [BSA+14, HW13, NFB+15].

Competent [WHA14]. Competitions [HBP17, KK16]. Complete [MMM11].

Completed [HC16a, Complex [RB09, WS16, JLC+13, MMM11].


Comprehension [CP17, HY07, LY07, LLC+15, LL17, WC16, ZZ16, AM14a, LL14, VR12, Voy11, WCT+12]. Compulsory [MR14]. Computation [Erd17a, Erd17b].

Computational [LF17]. Computer [DP07, LLC+15, LL14].

Computer-Based [LLC+15]. Computer-supported [LL14].

Computerized [KD09]. Concept [Bar17, BCC06, CW06, Dah17, HA07, HE17, HLAT16, KWO07, PMG+17, SV08, SC16, SVDK09, YT07, DDC+12, EGP+09, Fu15, LLT09, NSV13, Niy15, ODC09, SMFL15, SG15].

Conception [PMLC15]. Conceptions [AOZ09, BBT17, CW06, CK06, EPEG07, Lin16a, Liu05, MBBR08, PRW+07, Sum16a, Sum16b, TYC17, UKM11, Wan07, WL08, YYC04, ZZ16, AV06, AOC10, CYY10, Chi12b, HK10, KGA+11, KB16b, Ko10, Oh14, SKA11, Wai14, WCY16, Yan14]. Concepts [AT07, CB16, CC05, EG17, MSA17, Are12, AAY15, ÇAC09, CSM12, DC08, HBP17, JW15, KYA13a, KTBG15, KN13, LCC11b, PC13, RCT+11, STC12,
Conceptualising [RHM+11]. Conceptualization [Hsi13]. Conceptual [BPG11, CAC07, CB16, EG17, HA07, Hua17, JLC17, MC04, MQ07, SV08, SP17, SLC17, SF05, TT07, TS04, APCK12, BHSC10, ÇAC09, Eme09, Gok12, JW15, Lep12, NPR12, OBE12, PYR+12, SW14, TOV12, vA06].

Conceptualising [BPG11, CAC07, CB16, EG17, HA07, Hua17, JLC17, MC04, MQ07, SV08, SP17, SLC17, SF05, TT07, TS04, APCK12, BHSC10, ÇAC09, Eme09, Gok12, JW15, Lep12, NPR12, OBE12, PYR+12, SW14, TOV12, vA06].


Consideration [JLC+13]. Considerations [YAC10]. Considered [Sum16b].


Culture-Dependent [TLHV16a, TLHV16b]. curiosity [BSLM16]. current [KTBG15]. Curricula [Dog16, VT07b, dFAN13, VT07a]. curricular [FD12, HBTP13, So16, Tan11]. Curriculum [BVDV13, Hua17, KYA13b, Leu05, Mel10, SC03, Sah10, Sty08, TVC03, TC07, WM17, Wat17, ZF06, CTS15, HBTP13, HFWY14, KYA13c, Kuw13, OS10, PZLR16, TSA12, Tan11, VRW05, WLSC09]. cycle [ACY10, GDSD10].

D Czech [KV10].


Differences [HC16b, WwLD +15, YCH04, BRMNH15, CK14, Ing14, LY10, LM12, NSV13, PC13, VAF12, Yan14]. Different [AM04, Bie99, ÇP17, DNV17, EPEG07, HBP17, MNE12, RB09, AE15, BL09, CCN +12, DPK08, EE11, KST09, LLWS13, PMLC15, SBR14, WWTC10, Yü14]. Differential [Chi12a, BSD13, DPK08]. Differentials [AM04, Ble09, CP17, DNV17, EPEG07, HBP17, MNE12, RB09, AE15, BL09, CCN +12, DPK08, EE11, KST09, LLWS13, PMLC15, SBR14, WWTC10, Yü14]. Differentially [TT14].

differently [HCC15].

difficulty [CH15].
diffusion [TCC +10].
dimension [FB06, SVDK09].
dimensions [Dhi08, EN08, MMR15].
disciplinary [CK14, EFL +13].
disciplines [CS16, IAS17].
discursive [TA15, FL11, GCK15].
discussions [Bil06, PK15].
display [MMM11].
disproving [STC12].
dispositions [HY05].
disproof [OL08].
dissemination [MIJ15].
distance [AM04, KST09].
distinct [BHSC10].
distributive [LS15, TC09].
diversity [BC06].
division [CL10].
do [BC06, CBDV10, Dog16, KBK15, LJ16, Lin16a, MNN11, RH17, WT15, AB14, DL12, ZS11].
documenting [CBT +12].
does [DWM16, MNBZH +05, SGHM15, SGHM16, WHH08, ZG08, SLES09].
dogma [DCFC16].
doing [TLK17].
don’t [DBS15].
double [LLWS13].
draw [TRF05].
draw [KG15].
discourse [Bil06, PK15].
display [MMM11].
disposition [STC12].
disposition [SLW10].
educational [HILAT16].
editorial [Ano03a, Ler04, Lin05a, Lin12, Lin05c, Shy03, Tre04].
education [ALT +07, AM04, Aki12a, Aki12b, ABH17, BC05, GDMW16, ENG17, Gil04, GJS +17, HC16a, Kow07, Kya13b, KBK15, JR06, LF17, Ler07, LTCCY07, PZA16, QVST17, RAL +07, SC03, SBS +07, SBN16, TWC +16, TYC +17, Tsa06, VRFCT +08, VTV16, ZP06, AV06, BMN16, BS15, BK13b, CGR13, CBO09, CBT +12, DFR06, Ded11, HEB11, HpCH +16, Kaz14, KGA +11, Kya13c, Kni10, Kon13, KKvdW15, KB14, Las13, Lee16a, LHL +12, LH15, LC14a, LC14b, Lui13, MR14, NFK10, NFB +15, NDD14, OEMZ12, RRL11, RR09, Sch15, SBN14, TOV12, TDBLY16, Tip01, YL08, ZKS +05, HL07, SYOL07, VT07a].
educational [LF17, Law05, K010, LLL15, MP10, NFK10, SBR14].
educator [WHC17, AE10].
educators [AMA16, ZKS +05].
effect [AT07, AOZ09, CHC16, CT04, DMNH11, GG09, HMS16, LLWS13, Sch14,
AT15, BZST10, Ebr12, LM10, Oh11, PDG15, SWA$^+$12, WLSN14]. **Effective** [KFM$^+$17, RAL$^+$07, TLK17, CB09, O09]. **Effectiveness** [AAF12, WSA07, Bra12, ÇAC09, CS15, KYA13a, MP10, PZLR16, WWTC10]. **Effects** [BB17, DJB15, GN08, KWO07, KEET17, Las13, Len06, Ng10, PL15, RV17, Su08, YZK15, YT07, BJ10, BHM014, CA14, CTGS15, CCWL15, MMV16, ÖDC09, YHT16, BK13a]. **Effective** [KFM$^+$17, RAL$^+$07, TLK17, CB09, O09]. **Efficacy** [AO16, DC06, LJC08, RB09, YZK15, Bag11, Bur10, Cha10, CK14, JLC08, KIR12, LM12, Pet13, RCT$^+$11, Uit14]. **Egyptian** [SOTF13], **eight** [Kau11]. **Eight** [CCN$^+$12, IA08, AR10, JLC$^+$13, Lee11, Mor14]. **Eighth** [IA08], **Elder** [PTW05]. **Electric** [CK06, Lin16a, KTBG15, SY14], **Electricity** [AOZ09, ABG06, KH15, TDW$^+$17, Gok12]. **Electrochemistry** [AT07, OL14], **electrolysis** [STC12], **electromagnetic** [AC15], **electromagnetics** [Lep12]. **Elementary** [APR$^+$17, AM04, ABG06, Bil06, Ble09, CJ17, ÇAC07, DC16, DNV17, Eng17, ELO08, HNMG16, Jac12, Leu05, Li11, Lin14a, Lin16a, LLC$^+$16, LL17, LJC08, MDF08, MVC17a, MOI07, NPP16, Oro16, Sea16, UFW17, VTV16, WJ07, AAS13, Bay13, BL09, Bur10, ÇTC14, Cha10, CKH15, Ebr12, FG14, JLC08, KB17, Lee16a, Oli10, RB13, SLW10, TT14, WCT$^+$12, WT15]. **Elements** [FMOMG16]. **Eleventh** [SP05, vV16]. **Eleventh-Grade** [vV16], **Eleventh-Graders** [SP05]. **eliciting** [DS15]. **Else** [VWH$^+$17]. **Embedded** [DP07, LsL14]. **Embedding** [HNMGA16], **embodied** [KRT11], **emergent** [GLSM11]. **Emirates** [PZA16]. **Emotion** [Dog12]. **emotional** [HY05]. **Emotions** [LJ16, MSdSGG17]. **Empirical** [DNV17, NPT17, BK13b, HYC$^+$16, LHL$^+$12, NFB$^+$15, RT10, WCY16]. **Empirically** [BB17]. **Empowering** [PP08], **enact** [CKH15], **Enacted** [EE11]. **Enactment** [Leu05, SCS$^+$12]. **Encountered** [Nis17]. **Encounters** [Dud17], **end** [Las13], **endeavoring** [dFAN13]. **Energy** [ES09, JHWW16, TT07, YJY08, CSM12, EGN11]. **engage** [AE15, AE16]. **Engagement** [IAS17, WFPC04, DS15, OBE12, RR11, RR09]. **Engaging** [DC16, HS14, LCA16, NN11, WSW$^+$08, CJOC11]. **Engineering** [CCCN17, DC16, GS16, HPP09, IAS17, LW16, AC15, HCC15]. **Engineers** [vdWBD17]. **England** [SBN14, SBN16, WBB17]. **English** [AChl4, DBS15, DKL16, HILAT16, MR14, Sch14]. **Enhance** [Hua17, PP08, Cro09]. **Enhanced** [ALT14, Oh11, ÖDC09]. **enhancement** [Chl12a]. **Enhancing** [AW12, AO16, BC05, ÇAC07, CC16, CYK$^+$16, EG17, LL17, RR11, YFL15, RR09]. **Enquiry** [PD17]. **Enrichment** [Len06, Ng10]. **Enrollment** [BG17]. **Enterprise** [Das05]. **entities** [AB11]. **Entry** [LHC17, MPB10]. **Entry-Level** [LHC17]. **Environment** [CP17, CT04, Dhi08, Hew04, KD09, MDF08, MF05, Own06, Own10, PSO17, SF05, WCG09, BK13a, ETG16, GCK15, KB14, TDBLY16, Zei10, Zei15]. **Environmental** [NHL08, CBDV10, HY05, KIR12, LsL14, LsL14]. **Environments** [ALT14, Cro09, GGSP10, HIS$^+$16, HISH16, KAC15]. **Epilogue** [HY16, LGS17a]. **epistemic** [YHT16]. **Epistemological**
Epistemologies [AYLW16, RJHB12].

Equations [JLC13, SBK14, VAF12].

Equilibrium [Bag11a, BL09, Erdf17a, HLF07, KYA13b, sL14, Lin16b, LC14a, SYOL07, SBN16, SGHM16, Tsa13, TCTC07, TLHV16b, VT07a, Yeo17b].

Errors [MRDCC17, SA16, TSP12].

Essential [vdWBD17].

Establishing [BG17, SBM12].

Establishment [Miy08].

Estimation [Pap10].

Evaporation [HS14].

Event [Hob13].

Events [YKUIB17].

eyes [GS12, KYJS12].

Evidence [Erd17a, Erd17b, GS16, RH15, Bes11a, Bes11b, CTT11, HTWT14, LHL12, ZL12, CBDV10, Ped15].

eyes-based [CTT11].

Evolution [GG15b, YY13].

Evolutionary [LF17].

Examination [LCA16, Mg03, OBE12, TCH17, BSA14, Bes11a, Bes11b, Klv13, Kkv15, NFA15, ZC15].

Examinations [PB09].

Examine [GPCB15, Wan04].

Examining [AH11, AR10, DC16, HNMG16, MIJJ15, Pet13, QM14, WL08].

Example [SD16, SLC17].

excelling [WLSL14].

Exercises [TSMW16].

Expectation [Dog12].

Expectations [Gub16, Lor05, SF05, YT07, AB11, BEF15, BK13b, LLI15, SCR14].

Experience [Chi04, KBK15, So03, YY13, BHS15, MIJJ15, ÖDC09].

Experienced [ERC03, Als12].

Experiences [AAF17, Dud17, Kya13b, Ckh15, Kya13c, OS10, RRW11, SC11, ZB13].

experiencing [SYOL05, SYOL07].

Experiment [LF17, Aky16].

Experimental [ZGZ17].

Experimentation [Miy08, TLK17, ES16].

Experimentation/Measurement [Miy08].

experimenting [WLSL09].

Experimento [Dud17].

Expert [TA15, CMME15, KK16, SB09].

Expertise [BK15, GPCB15].

experts [DW15].

explain [KYA13a, MR14].

Explaining [CCW16, Uit14].

Explanation [JHW16].

Explanations [GSO17, FTW05, TT07, DE15, LTT06].

explicit [EV11, FB06, MMR15].

Explicitness [vV16].

Exploiting [Fos15, TVC03].

Exploration [Bla04, Hun14].

explorative [vA06].

Exploratory [BTT17, CT04, G09, PZA16, DRT12, JW15, LTT09, RJHB12, Yan14].

explore [EFL13, MJMOR11].

Exploring [ARZRV16, APR17, AYLW16, DC06, DPK08, LHC17, LS14, Ozd10, TT07, WQNC17, WS16, ZB13, WLSL09].

Expressed [CT17].

External [DNV17, LKC15, DGLG15, LLWS13, SB09].

extra [HBTP13, So16].

extra-curricular [So16].

extracurricular [BNM16].

Eye [HC16b, SBK14, ALA15, AM14b, CY14, CMME15, HTWT14, Hun14, LL14, YHT16].

eye-tracking [ALA15].

identities [TC09]. Identity
[WFPC04, FD12, Hob13, KHL12, MBF13, MDT13]. III [WQNC17]. ijsme
Image [Dah17, HY07, CTT+11, RT10]. images
[ARZRV16, AB13, MJMOR11]. immersion [AAY15]. immigrant
[Arc12, AK13]. Impact
[AVT16, HL04, LHC17, Liu17, MMR15, OL14, SW14, Yükle14, EGP+09,
Gok12, HCC15, Mor14, NFK10, OF15, SKA11, SG15, ZC15]. Impacts
[AK17b, Kuw13, MIJJ15]. impairment [IK14]. Impartialists [KKE+17].
impetus [CA14]. Implement [Che08, AH11]. Implementation
[Dud17, Lor05, MMA05, NCH11, CTGS15, HFWY14, MAL+11,
Mor14, OS10, RCG+11]. Implementing
[CCCN17, KFM+17, LB08, Lee16a, SIS+11]. implicated [FH13].
Implication [JMS16]. Implications
[BdSSC16, GSO+17, RV17, Sha06, WFPC04, FG14, Kol0, KB14, RB13].
implicit [EVV11]. importance [BNH+15, HEB11]. Imposers [KKE+17].
Improve [DWM16, HmYB07, BS15, TC09]. Improved [TSC17].
Improvement [OO12]. Improving [BK13b, HP11, MSA17, ÇAC09, Rutt11].
in-depth [VR12]. in-service [KLJ+13]. including [HTTP13, PC13].
Inclusion [BC06, dFAN13]. inclusive [CTT+11, MMZ09]. Incoherence
[Miy08]. Incommensurability [Kaw07]. Inconsistencies [ZGZM17].
increasing [NWD11]. Indian [CDT+11, NRKR13]. indicators
[BSLM16, PSC+13]. indigene [LY10]. Indigenous
[KYA13b, KYA13c, ATG13, GS13, MDT13, Web13]. Individual
[TLHV16a, TLHV16b, LTT06, LS14]. Indonesia
[BSA+14, ModBB12, RCT+11]. Indonesian [ELY15, RK10]. Induction
[BHD+15, AC15, PPS12]. inductive [NEAC10]. Industry [BC05].
inequality [Kni10]. inference [CMME15]. Infinite [Bar17]. Infinitesimal
[Par07]. Influence
[CCW16, CYT16, Das05, DJE17, Mea07, PD17, RH17, TYC17, HK11, Ing14].
Influences [CK14, KH06, Ho10]. influencing [GGD15b]. Informal
[DBJ15]. Information [DFR06, LCA16, LF17, SU08]. Informed [MVC17a, MVC17b].
Informing [DCFC16]. informs [Ols07]. infused [HIS+16, HISH16].
inheritance [DCFC16]. inhibitory [BES12]. initial [KGA+11, Kön13].
Initiative [HL04]. Innovative [MDF08, SF05, BK13b, Hal12]. Inquiry
[AOZ09, AMG16, Che08, Dud17, IAS17, KD09, KH08, LLC+16, MHI09,
MSA17, QVST17, TYC17, WL08, WSW+08, Zio08, AMBL16, BRMNH15,
CCG+11, CS15, CKH15, DMNH11, ES16, FD12, HTWT14, KLI+13,
KBG05, LYP14, MSH10, MBF13, Mor14, Oli10, OEMZ12, SCS+12, mS13,
So16, WWT10, ZKS+05]. Inquiry-Based
[AOZ09, AMG16, Dud17, MSA17, QVST17, TYC17, Che08, FD12, HTWT14,
MSH10, Oli10, OEMZ12, SCS+12, WWTC10, ZKS+05]. Inquiry-Oriented
[LLC+16]. Insights [KH06, LG13, AV06, TOV12, TRF05]. Institutions
[BMD+17, Kuw13]. Instruction
Kenya [Bag11, GN08, KWO07, KB16a]. key [Che12]. kindergarten [HFWY14, TM17]. kinetic [TCC*10]. know [AB14]. Knowing [AVM16, RB13]. Knowledge [APR+17, BHD+15, CCW16, CEB12, DJB15, EVV11, ES04, FL06, Gub16, HNA16, HE17, HFVH17, Hua06, KB16a, KLH15, KBK15, LL06, LTCCY07, LY07, MQ07, SB09, TB17, TCH+17, YAC10, vV16, AW12, BSD13, CJOC11, DFR06, DW15, ELY15, Emo09, HTWT14, Hsi13, HY05, HL07, JLCT12, Kid11, KRT11, Kón13, KV10, Las13, LH14, LCC+09, Lin14a, Lui13, Maj14, Nyi15, OBE12, WLSN14, Wai14, WWT10, Web13, Yik14, ZB13].

Kong [Che14, Ho10, KFM+17, LM15, So03, YCH04, YT07, ZB16+17, ZL12].

Korea [KYJS12, SBN14, SBN16]. Korean [HK10, JMS16, KB17, LFF03, Lee11, MLK+15, OS05]. Kosovar [ETG16].

Kuwait [Ebr12].

Lab [TSMW16]. laboratories [BJ10]. Laboratory [CT17, CHC16, Che08, KD09, KH08, TYW+17, BRMNH15, DMNH11, KIR12, Mas15, MIJ15, ŌDC09]. laboratory-based [KIR12]. Lakatosian [Oh11]. Language [CGR17, HNMGA16, Hua06, HILAT16, Kaw07, PB09, Sca16, WS16, Ale14, DBS15, GGS10, HL07, Ik14, O015]. languages [LP11]. Lankan [CEB12]. Large [ALT+07, Lin17, Che12, KBY11, NFK10].


Learners [Ble09, HILAT16, NLHS08, PB09, Ale14, BL09, WD12]. Learning [AT07, AYLW16, ALT+14, AM04, AK17b, ABG06, BMN16, CTC16, CB16, CΠ17, CCCN17, CHC16, CCWL15, CABR06, CT04, Dhi08, DL12, Djb15, EN08, EG17, FCS15, FT05, FB06, GGD15a, GSO+17, GHP07, HA07, HNMGA16, HE17, Hew04, HSN16, IAS17, KEET17, LE06, LL06, LB08, LKC+15, LM10, MNB17+05, MSA17, MDF08, MVC17b, MBBR08, NLW16, Own06, Own10, PS017, PP08, RGCO08, SBT12, So03, SGHM15, SGHM16, Sb08, SMZ06, TDBLY16, TS04, UIF17, WD12, WSA07, WCG09, YZK15, Yn03, YT07, ZB16+17, ATG13, AAMU+14, And14, AE10, BSA+14, Br12, BNI+15, CCG+11, CWW11, CRR09, CY14, CTH12b, CJOC11, Cro09, DCF16, ETG16, Ebr12, FUL15, GGSP10, GDS10, HCC15, Ho10, HYC+16, HIS+16, HIS16, JLC+13, KYJS12, Lin06, LHL+09, LT11, ME13, MD13, NPR12, NSV13, OC15]. learning [OL14, OZD10, PZLR16, PY+12,
GPCB15, GSJ\textsuperscript{+}17, G"{u}v09, HL07, IA08, Jao17, JMS16, Kau11, KHL15, Ko10, KBK15, Kot16, LJ16, LOJ08, LHC17, Len06, Ler07, Leu05, LTCCY07, Lin05b, LW16, Lin17, Lui13, MHIS09, McG03, MWM05, MKSK16, MF05, MC04, Ng10, NLW16, NDD14, OL08, Oro16, PP08, PP15, PRW\textsuperscript{+}07, PD17, RH17, RAL\textsuperscript{+}07, RA17, SYOL07, SBN16, SF05, Sty08, SMZ06, TCH\textsuperscript{+}17, TSP16, Tsa06, TYC17, TLHV16a, TLHV16b, TS04, UFW17, VRFCT\textsuperscript{+}08, Vid15, VT07a, WM17, WHC17, YnLL08, YKUIB17, ZBL\textsuperscript{+}16, ZF06, ATG13, AAF12, AV06, Ama16, AW12, ALA\textsuperscript{+}15, Are12]. mathematics [Bag11, BHS15, Bay13, BW10, BC11, BK13a, BAV11, BK13b, Bur10, CGR13, CPMSW11, Cha10, CTGS15, CK14, CL10, CCN12, Che14, Chi12a, Chi12b, CBT12, CMME15, Cro09, DBS15, Dcd15, DK15, ELY15, EK09, FH13, Fos15, GCS10, GN08, HCC15, HGK11, HP11, HNB11, Hsi13, HWW13, HIS16, HISH16, HFWY14, Ing14, KHL12, Kaz14, KGA11, KG15, Kni10, KK16, KKvdW15, Kot10, KAC15, Las13, LY10, Lee11, Li11, LP11, LHL09, LH16, Liu09, LM12, MW09, MS14, Mas15, MMK11, MOdBB12, MP10, NFB\textsuperscript{+}15, NWD11, OO15, OS10, Owe14, PDG15, PV14, Pet13, PMSK\textsuperscript{+}12, RB13, RR11, RHM\textsuperscript{+}11, RRW11, Rut11, Sah10, Skp13, SIS\textsuperscript{+}11, SBN14, mS13, TSA12, THV15, VTCvS14, WLSL14, WOB12, WT13, WD12, WLSC09, WMP12, Yan14, YL08, Y"{u}"{u}k14, ZS11, ZL12, ZB13]. Mathematics-Related [TLHV16b, HWW13]. Mathematics/Science [Cor17]. Mathematization [Nis17, BJ10]. Maths [LJ16]. Mathematics [Bag11, BHS15, Bay13, BW10, BC11, BK13a, BAV11, BK13b, Bur10, CGR13, CPMSW11, Cha10, CTGS15, CK14, CL10, CCN12, Che14, Chi12a, Chi12b, CBT12, CMME15, Cro09, DBS15, Dcd15, DK15, ELY15, EK09, FH13, Fos15, GCS10, GN08, HCC15, HGK11, HP11, HNB11, Hsi13, HWW13, HIS16, HISH16, HFWY14, Ing14, KHL12, Kaz14, KGA11, KG15, Kni10, KK16, KKvdW15, Kot10, KAC15, Las13, LY10, Lee11, Li11, LP11, LHL09, LH16, Liu09, LM12, MW09, MS14, Mas15, MMK11, MOdBB12, MP10, NFB\textsuperscript{+}15, NWD11, OO15, OS10, Owe14, PDG15, PV14, Pet13, PMSK\textsuperscript{+}12, RB13, RR11, RHM\textsuperscript{+}11, RRW11, Rut11, Sah10, Skp13, SIS\textsuperscript{+}11, SBN14, mS13, TSA12, THV15, VTCvS14, WLSL14, WOB12, WT13, WD12, WLSC09, WMP12, Yan14, YL08, Y"{u}"{u}k14, ZS11, ZL12, ZB13]. Mathematics-Related [TLHV16b, HWW13]. Mathematics/Science [Cor17]. Mathematization [Nis17, BJ10]. Maths [LJ16]. Mathematics [Bag11, BHS15, Bay13, BW10, BC11, BK13a, BAV11, BK13b, Bur10, CGR13, CPMSW11, Cha10, CTGS15, CK14, CL10, CCN12, Che14, Chi12a, Chi12b, CBT12, CMME15, Cro09, DBS15, Dcd15, DK15, ELY15, EK09, FH13, Fos15, GCS10, GN08, HCC15, HGK11, HP11, HNB11, Hsi13, HWW13, HIS16, HISH16, HFWY14, Ing14, KHL12, Kaz14, KGA11, KG15, Kni10, KK16, KKvdW15, Kot10, KAC15, Las13, LY10, Lee11, Li11, LP11, LHL09, LH16, Liu09, LM12, MW09, MS14, Mas15, MMK11, MOdBB12, MP10, NFB\textsuperscript{+}15, NWD11, OO15, OS10, Owe14, PDG15, PV14, Pet13, PMSK\textsuperscript{+}12, RB13, RR11, RHM\textsuperscript{+}11, RRW11, Rut11, Sah10, Skp13, SIS\textsuperscript{+}11, SBN14, mS13, TSA12, THV15, VTCvS14, WLSL14, WOB12, WT13, WD12, WLSC09, WMP12, Yan14, YL08, Y"{u}"{u}k14, ZS11, ZL12, ZB13]. Mathematics-Related [TLHV16b, HWW13]. Mathematics/Science [Cor17]. Mathematization [Nis17, BJ10]. Maths [LJ16].
Misconceptions
[Bay09, LL06, OBH17, SA16, ZGZM17, AW12, LLT09, TSP12]. Mixed
[TYC17, Top13]. Mixtures [CB16]. Mobile [ABH17, CMME15]. Mode
[SG09]. Model [DGEP16, FCS15, FT05, LF17, MQ07, ODT07, PMCG+17,
RV17, BPG11, Che14, Chi12a, DS15, HL13, KLJ+13, Lin14a, NFB+15,
SOTF13, SLW10, TSP12, ZL11]. Modeling
[KD09, MWM05, PL15, Tlg14, HS14, JLC+13, Lin14a, Sch15, SP15, VAF12].
Modelling [Gil04, Lee11, SP17, DS15, DK15, OdC15]. Models
[DC16, Gil04, Lin05, LR08, NPT17, SP17, AB11, AB13, MMV16, WOB12, WJL14].
modern [Pap10]. Modelling [Gil04, Lee11, SP17, DS16, Gil04, Liu05, LR08, NPT17, SP17, AB11, AB13, MMV16, WOB12, WJL14].
molecular [DCFC16]. Moon [SLW10]. Morphological [FG14]. Mothers
[Guv09]. Motion [Bay09, AAY15, EVV11, Fer14, Ful15]. Motivating
[DP07]. Motivation [BB09, CB16, FT05, HBP17, KWO07, NLW16, Oro16,
PP15, ZL11, CWW11, DRT+12, MDT13, OL14, VAF12]. Motivational
[KD09, MWM05, PL15, Tlg14, HS14, JLC+13, Lin14a, Sch15, SP15, VAF12].
Movement [ABPD16, Als12, DGEP16, LYC04, MOI07, Yan03, YnLL08, YRR09, HNB11].
numbers [Che12]. Numeracies [ZZ09]. Numeracy [GGD15a, DL12].

objects [PMLC15]. Observational [PL15]. observe [KYA13a]. Obstacle
[SVDK09]. Obstacles [Nis17, Mor09a, Mor09b]. Occur [LH08]. OECD
[YCH04]. of-the-art [HEB11]. Offered [Sty08]. Officers [SC03]. official
[AV06]. Old [NK04, MR14]. olds [BFE15, EVV11]. Omani [AAF17]. One
[AVM16, Dud17, RL12]. Online [TSMW16, WC16, HTWT14]. Open [Zio08].
Openness [YCH04]. Oered [Sty08]. Ocers [SC03]. Olds [NK04, MR14].
Olds [BFE15, EVV11]. Oman [AAF17]. One [AVM16, Dud17, RL12]. Online
[TSMW16, WC16, HTWT14]. Open [Zio08].

Pacific [CABR06, TVC03]. Pakistan [Hal12]. Palestinian [Zei10, Zei15].
paper [KAC15, RR09]. paper-and-pencil [KAC15]. Papers
[Ano13, Ano12c, sL13, Tsa13]. Papua [PTW05]. paradox [DAO+11].
Parental [SK17, Ing14]. part [AH11]. Participants [HBP17]. Participate
[HCH16]. participating [DRT+12]. participation
[Mor14, NWD11, RR11, RHM+11, RR09]. particle [BPG11, TCC+10].
Particular [KH06]. particulate [AOÇ10]. partitioning [BFE15, LS15].
pb1 [HCC15]. PD [MAL+11]. Pedagogical
[APR+17, CCW16, KBK15, Len05, LTCCY07, SBIN16, Bra12, HEB11, Hsi13,
Kön13, OL14, Rut11, SBIN14]. pedagogies [NWD11]. Pedagogy
[DP07, Ael14, DFR06, KIR12, KB17]. Pedagogy-Embedded [DP07]. Peer
[KH15, YKUIB17, Gok12, Gok15, Kot10]. peers [ZS11]. English [AM14a].
from [Jr.06]. Measurement [Miy08]. or [HILAT16]. pure [Lui13]. Science
[Cor17]. without [CS15]. pencil [KAC15]. people [RR11, RR09].
Perceived [AM04, HCH16, JLC+13, BK13a, Ing14, LCC11a]. Perception
[Dog12, DJB15, Len05, MKSK16, Sea16, Nar15, Tig14]. Perceptions
[CT04, NRKR13, PSO17, PZA16, TC07, WM17, BW10, BAV+11, DFR06,
KG15, LY10, MPB10, MR14, MLK+15, TBT+10, Zio10, ZB13].
Performance [AWL16, BG17, BHD+15, DJB15, ES09, HMS16, LLC+16, MMA05, PB09, SP05, TCH+17, Voy11, YnLL08, ZG08, Can14, Gok15, LM15, Lin14B, Lin16b, OS10, RB13].

Periodic [FMOMG16]. Periodicity [TSP16].

Persistence [CS16, PMLC15, BHS15].

Persona [Lil07]. Persona-Based [Lil07]. Personal [AYLW16, PSO17, KHL12]. Personalities [IAS17].

Perspective [EGJ09, ES08, HY07, LL05, TC07, EDMA15, Hsi13, LL14, MS14, RVG15].

Perspectives [ALT14, BdSSC16, YAC10, ZKS+05, ACY10, LG13, Owe14, SC14]. Ph [SYOL07, KYA13a, PC13]. PhD [VPFCT+08].

Phenomena [LH08, PTW05, AB11, Oh14]. phenomenon [GLY09].

Philosophy [MVC17a, MVC17b]. photoelectric [Oh11]. photosynthesis [SVME15].

Physical [CT17, Gov17, SLC17, VT07b, MW09, VT07a].

Physics [AYLW16, CT17, CC05, EN08, EGJ09, FL06, Joh16, KH15, LE06, NHL08, Nis17, TSMW16, TDW+17, TSP16, ZGZM17, BJ10, CWW11, EFL+13, EGN11, Gok12, KN13, KKVdW15, Maj14, MR14, OB15, PMSK+12, QM14, RR16, RHM+11, TDBLY16, Top13].

Physics-Related [AYLW16].

Physiology [MIJJ15]. Piagetian [Bab10, NDD14]. picture [LCC11b].

Plain [Sch14]. Plain-English [Sch14]. plan [GDSD10, TT14].

Plants [Wan04, Wan07]. platform [Liu09]. playing [BEF15].

Plots [LKC+15]. Point [BC06, KG15]. Policy [AC01, AV06, ACY10, HP11].

Poser [KK16]. Posing [CJ17, KD09, Can14, CVCV11].

Positions [We15]. positive [SWA+12]. Possibilities [TT14].


Potential [JLC17, ME13, RGC08, KGA+11, TIA12, TT14].

Power [LHL+09]. PowerPoint [WSA07].

Practicality [SIS+11]. practically [LTT06]. practically-based [LTT06].

Practice [ES08, ELO08, MBBR08, WFK+16, CTT+11, FL11, König13, LC14a, LC14b, LYP14, MMK11, MIJJ15, Sch15].

Practices [AK17b, GPCB15, IAS17, LL05, MSA17, PP08, SBN16, Aky16, Ama16, Bag11, CCN+12, NRRK13, QM14, RB13, SAP13, SC14, SBN14, So16, TRF05].

Practitioners [ERC03].

Pre [Ala16, ABPD16, AO16, BSLM16, Bay09, Bil06, Bla04, CAC07, CT04, DS15, DJB17, DJB15, ELO08, Gub16, HM09, Jao17, KN13, LL06, LHC17, Lin05b, TM17, WSW+08, YZK15, YRR09, CA14, DK15, GGD15b, KIR12, KB17, MPB10, NN11, Oh14, SMFL15, TRF05].

pre-entry [MPB10]. Pre-kindergarten [TM17].

Pre-school [DJB15, TRF05]. Pre-schooler [BSLM16]. Pre-Service


[PSO17, CC16, VAF12]. Reinventing [Pap10]. rejection [GGD15b].

Related [AYLW16, Göt09, Nis17, PMCG+17, RH17, TLHV16a, TLHV16b, YJY08, BW10, CSM12, CRR09, DC08, HWW13, JC10, KB16b, LS14, LSL14, Uit14, WCY16]. relating [TCC+10]. Relation [AGBC17, PSO17, Kkv15, TSP12]. relational [AYLW16, Guv09, Nis17, PMCG+17, RH17, TLHV16a, TLHV16b, YJY08, BW10, CSM12, CRR09, DC08, HWW13, JC10, KB16b, LS14, LSL14, Uit14, WCY16]. relating [TCC+10]. Relations [AYLW16, Guv09, Nis17, PMCG+17, RH17, TLHV16a, TLHV16b, YJY08, BW10, CSM12, CRR09, DC08, HWW13, JC10, KB16b, LS14, LSL14, Uit14, WCY16]. relating [TCC+10]. Related [AYLW16, Guv09, Nis17, PMCG+17, RH17, TLHV16a, TLHV16b, YJY08, BW10, CSM12, CRR09, DC08, HWW13, JC10, KB16b, LS14, LSL14, Uit14, WCY16]. relating [TCC+10].

Rejection [GGD15b].


S [SYOL07]. Safety [ZGZM17]. same [EE11]. Sample [SP05, WK08]. sampling [JLC+13]. Satisfactory [AM04]. Saudi [AAS13, Tig14]. Savart [Maj14]. Scaffolding [MBF13, TWC+16, LHL+12]. Scaffolds [CHC16]. Scale [BMD+17, Dud17, Lin17, TLK17, ALT+07, CCG+11, KBY11, NFK10, TSO16].
schema [GLSM11]. schemes [BC11]. School
[AVT16, AYLM16, AM04, AK17b, ABG06, DC16, DB17, Dog16, Eng17, HBP17, JMS16, KWO07, KB16a, KFM+17, LE06, LFF03, Len06, Lin04, LLC+16, LR08, MH17, MsdSGG17, MRDC17, MO107, NHLS08, Ng10, NPP16, PL15, PTW05, RH17, RGC08, SP17, Sha06, So03, Sum16a, Sum16b, TC07, TSP16, TYC17, TSC17, UFW17, VT07b, WS16, WHH08, YKUI17, YCL04, vV16, AAS13, Bag11, BK13a, BS15, CWW11, CTG015, CK14, DB15, DMNH11, DJB15, EGM11, GN08, HBTP13, HK10, Jac12, Kuw13, LS14, Lin14a, LLT09, LCC11b, MS14, MMK11, MIJJ15, MP10, MMZ09, MG15a, MLK+15, NY11, NN11, dFAN13, OdC15, ODC09, PPS12, PV14, Ped15, QM14, RCT+11, RB13, RRW11, RVG15, Rut11, STC12, TBT+10, TS16, TRF05, Uit14, VT07a, Wai14, WP12, WT15, Wel15]. school [Yan14].

School-Related [RH17, LS14]. schooler [BSLM16]. Schooling [WM17, MRA10]. Schools [PP08, BSA+14, CBDV10, ETG16, Ful15, LP11, MR14, PZLR16, SLW10, ZKS+05]. Science
[APR+17, AAAB16, AMG16, AD16, AAF17, ALT+07, ALT14, AM04, Ano12a, Ano12b, ABH17, AO16, BSSC16, BE16, BB09, Bla04, Ble09, CCCC17, Chi04, CYT16, CRG17, CT04, DC06, Das05, EDMA15, GS16, Gil04, GPCB15, GSO+17, GHP07, HSMO06, HnYB07, HNMA16, HC16a, HFVH17, Hew04, HBP17, HY07, Hua06, HC16b, HCH16, HILAT16, HLO4, IAS17, JLU+10, KYA13b, KKE+17, KSE16, Jr.06, LCA16, LF17, LOJ08, LFF03, LL05, Ler07, Lin14b, LC+15, LL+16, LW16, LL17, LJC08, MBNZH+05, MHI10, MSA17, MDF08, MCV17a, MCV17b, McC03, MP10, MG03, MWM05, MBBR08, MKSK16, MC04, MMA05, NLW16, OL08, OS05, OS17, PP08, PA16, PB09, Ran06, RGC08, RAL+07, RV17, RH15, SBS+07, Sch14, SG09, Sca16, SCJ16, So03, SGHM15, SGHM16, TWC+16, TVC03, TC07]. Science
[TYW+17, Tsa06, TYC17, TA15, TSC17, VJ06, Vid15, VT16, VT07b, WC16, Wat17, WS16, WSA07, WFK+16, WCG09, YCH04, YT07, ZP06, ATG13, Ale14, AAS13, AMBL16, Are12, AK13, AM14b, AAY15, AB14, BTV11, BW10, BL10, BMN16, BAV+11, BNH+15, BHM014, Bur10, CA14, CCG+11, CY14, Che11, CCWL15, Chi12a, CYK+16, CBO09, CJOC11, DFR06, DAO+11, DRT+12, DK10, Elbr12, Eme09, FG14, FD12, GCS10, GGD15b, Hal12, HCC15, HT13, Ho10, HTWT14, HEB11, HK10, HNB11, HpcH+16, Hyc+16, HIS+16, HISH16, HL07, Hun14, IK14, Ing14, JLC08, JLC+13, KGA+11, KB16b, KYA13c, KYJS12, KBY11, Kni10, KV10, Kw13, KB14, LAMV12, LCC11a, LHL+12, Lin14a, Lin16b, LH15, LC14a, LC14b, LS14, LM12, LLL15, MMK11, Mel10, MDT13, MMZ09, MG15a, MG15b, Mor14, MPB10, NCH11, NRKR13].

science [FG14]. Science-Methods [Ble09, BL09]. Science-Oriented
Structuring [CB16, Nis17]. Struggles [AH11].

Student [AT07, AB14, AYLW16, ALT+07, ABH17, AE15, AYLW16, AÖC10, BB09, Bi06, BCC06, CCW16, CdHD16, CS16, ÇK06, Che12, CGRA17, DC06, DC16, DTV15, DNV17, DWM16, DRT+12, EN08, EG17, FH12, GSO+17, HnYB07, HE17, HMS16, HCH16, IAS17, JCL17, JSS17, JHWW16, KWO07, KYA13b, KH06, LCA16, LE06, LL06, LFF03, Leel6b, Len06, LTCCY07, Lin04, Lin16a, LLC+16, LL17, Lien17, Liu05, LR08, LH08, MH17, MSA17, MSdSGG17, MSDK16, MRDCC17, Ng10, NLW16, NFB+15, NO05, Oro16, OBH17, PSO17, PP08, PP15, PZA16, PN04, PTW05, PRW+07, PD17, PB09, RSPK14, Sch14, SLC17, SA16, SF05, Su08, Sum16a, TT07, TBP17, TCH+17, UFW05, Vid15, Wan07, WL08, WC16, WK09, YCH04, YT07, YCL14, YY13, YY08, vV16, ARZRV16].

Student-Centered [MH17].

Student-led [BB09]. Student-teacher [BB09]. Student-with-GeoGebra [JC17].

Studies [ERC03, GHP07, DVV15, HS13, HYC+16, SLE09, WCY16, YL08]. Study [APR+17, BBT17, BC05, CT17, CABR06, CT04, DNV17, GG09, HNMGA16, JHWW16, KYA13b, KH06, LB08, Oro16, PZA16, PN04, PRW+07, QVST17, Sap13, SA16, TSMW16, TLHV16a, TLHV16b, VC17, Wan07, WL08, Yan03, YnL08, YYC04, YCH04, ALA+15, AB14, BSA+14, BPG11, BW10, BC11, ÇT14, Cha10, CL10, CCN+12, DW15, DRT+12, ETG16, EDS10, FD12, HFWY14, HY05, JC10, Kau11, KYA13c, KYJS12, KK16, LCC+09, LIT09, LCC11h, ME13, MMP14, MR14, OS10, OdC15, ÖDC09, PZL16, PV14, PMLC15, RJHB12, RL12, RT10, Rut11, So16, Tan11, TOV12, TDBLY16, Top13, TCC+10, VTCvS14, Yan14, YHT16, ZS11, vA06]. Studying [TRF05, SY14]. styles [CA14, WT15]. Subject [Gub16, KLH15, DW15, KN13, dFAN13]. Subject-Specific [KLH15].

submicroscopic [RK10]. subtraction [OO12]. Success [CKH15, PSC+13].
successes [ACY10]. Sum [JLC17]. summer [AMBLL16]. sums [WLJ14].
Sun [DC16, SLW10]. Support [Dog16, SGHM15, SGHM16, TYW+17, Ing14].
supported [FL11, LL14]. Supporting [Ale14]. supportive [BK13a].
Survey [IAS17, MR14, RSPK14, LAMV12]. sustainable [BMN16, EGN11].
[DP07, LL17, SVDK09, Wan04, DPK08, Liu13, MIMM11]. Systematic
[TYW+17]. Systematicity [vV16]. Systemic [HY07, HL04].

T [VT07a]. Tables [Sha06]. Tacit [FB06]. Tacit-explicit [FB06]. Taiwan
[CLY10, CCN+12, HL13, JLC08, KYA13b, KYA13c, Las13, LL+16, LJC08,
WT15, Yan03, YRR09, ZBL+16]. Taiwanese
[AMBLL16, Chi12b, Hsi13, HW11, HPV+16, HY05, JLCT12, JLC+13,
LY10, LW16, Liu05, Yan14, YCL04]. talented [LG13]. Talk
[LL+15, LL+16, McG03, TA15, KHL12]. Talking
[EGJ09, CC14, Kot10]. Task
[JSS17]. Tasks
[AWL16, CJ17, Dah17, Hew04, MAA05, Ye017a, Ye017b, ZG08, Bab10, Bay13, Bes11a, Bes11b, EVV11, LM15, SY14]. tasks*
[Lin06]. taught [DCF16, EE11, MMZ09]. Teach
[AO16, IK14]. Teacher
[AVM16, APR+17, AMG16, AAF17, AO16, BE16, Bla04, BKC15, BHD+15,
CW06, CAC07, CCW16, Chi04, CGR17, Cor17, CT04, DB17, DJB15, ES08,
Gov17, HSM06, HNAA16, HC16a, HFV17, IAS17, Jao17, KBH+15,
KB16a, KKE+17, KLJ+13, KLT15, KBK15, LFF03, LL05, LTCCY07, LW16,
LJC08, MHS09, MMBB12, McG03, MHW05, MMBR08, MKSK16, MAA05,
MO07, NPT17, Ny015, OC08, PS017, PN04, RAL+07, RH15, Se16, SMZ06,
Sum16a, Sum16b, TBP17, TC07, TCH+17, TA15, WM17, WJ07, WHH08,
WHC17, YZK15, YKU17, ZZ16, AV06, AH11, AAMU+14, AAS13, Ama16,
AW12, Bag11, BB09, BW10, BSD13, BK13b, Bur10, CT14, CGR13, Cha10,
CVCV11, CCN+12, CB09, DS15, DED15, DW15, EE11, ELY15, EMDA15,
Em09, GLY09, HBT13, HT13, HOb13, HK10, JLC08]. teacher
[JAC12, KHL12, KGA+11, KB17, Ko10, KOn13, KN13, KSE16, KB14, Las13,
Lee16a, LG13, Li11, LCC+09, Lin06, LCC11a, Lin14a, MNE12, ME13,
MIJ15, MG15a, MG15b, Mor14, NY11, NN11, OBF15, Oli10, Ols07,
OEMZ12, QMI4, RRW11, RL12, RCG+11, SMFL15, Sap13, SC14, TBT+10,
TDBLY16, Top13, VTCvS14, WAI14, WMS13, Yan14, ZKS05, ZC15, ZB13].
teacher-generated [NY11]. teacher-researchers [KB14]. Teachers
[AAAB16, Ala16, ABPD16, AD16, AM04, Bay09, CP17, Che08, Dog16,
Dkl16, ERC03, ELO08, GPCB15, Gub16, HM09, HCBZ03, HL04, Kot16,
LHC17, Lin05b, Lin16a, Lin17, MDF08, POP08, SC03, Sty08, TCV17, WSA07,
WSW+08, YRR09, BW10, BK13a, BAV+11, CA14, CKH15, CMM15,
DFR06, Ded11, DK15, ELY15, GGD15b, HW11, KST09, KIR12, KBY11,
KAC15, LCC11a, Maj14, OS10, Oh14, RRW11, WT13, ZKS05]. Teaching
[AOZ09, APR+17, AAAB16, AAF17, AK17b, BddSSC16, Bla04, CW06,
CCC17, CP12, Chi09, CT04, Ddu17, GGD15a, HNMA16, HNAA16, HE17,
U.S. [AMBLL16, CW06, HL04, LS14]. Uncertain [RH15]. Uncertainties [CT17]. Uncovering [RGC08]. Undergraduate
[CT17, Das05, LS14, PRW+07, TLK17, AU15, BHS15, Lep12, Lin14b, Lin16b, Mor09a, Mor09b, Pet13, SC11]. underlying [BC11, Chi12a, GLSM11]. Undermine [JLC17]. understand [DBS15, KST09, MRA10, Mor09a, Mor09b]. Understanding [AT07, Bil06, CAC07, Das05, EG17, FMOMG16, GS16, HC16a, Hua17, Lin04, Lyc04, LH08, MMK11, MWM05, MC04, NPP16, Oh14, PMCG+17, Par07, RCT+11, RHM+11, SLC17, SVDK09, TSC17, Wan04, WBB17, WK09, YCL04, And14, APCK12, CdHD16, CSM12, Che12, Che11, DC08, DvV15, GS12, Gokl12, Hal12, Jac12, JW15, KYA13a, KTBG15, KN13, Lep12, Lin06, MAL+11, MMM11, MMR15, Mor14, NPR12, Oli10, OL14, ODc09, PPS12, PC13, PMSK+12, SMFL15, STC12, SVME15, SG15, SW14, TOV12, TCC+10, VRW05, WP12, WLJ14, WMS13]. Understandings [HmYB07, WL08, AMBLL16, GS13, RK10]. unexpected [Fos15]. Unit [LB08, AAY15, DFR06, NPR12]. United [PZA16, ZF06]. Units [OC08]. Universal [Kaz14, SBT+06]. Universality [Miy08]. Universe [Gov17, Liu05]. universities [MW09]. University [AK17b, GS12, MWM05, Mor09a, Mor09b, RH17, SD16, Su08, Vid15, WMP+12, Y13, BHS15, Maj14, NEAc10, RR16, RJHB12, SVME15, TDBLY16, YHT16]. upmap [RHM+11]. upon [WLSN14]. Upper [AD16, BS15, CGR17, Sum16a, Sum16b, VT07a, VT07b, Bag11, EGN11, Ped15, RT10, Uit14]. upper-secondary [Uit14]. urban [Kuw13, PV14]. USA [GGD15b, HEB11]. Use [APR+17, AMG16, BCC06, Dah17, DKL16, JE17, Lee16b, LR08, MHIS09, UFW17, Bab10, CEB12, Din14, DDG+12, GGSP10, KV10, Maj14, RSPK14, RVG15, SKA11]. Used [Ala16, DB17, YRR09, Als12]. usefulness [CDT+11, LCC11a]. Using
utilising [CP12]. utilized [LH15]. utilizing [WMS13].


Year [CABR06, Dah17, DC06, HmYB07, HNMGA16, LJ16, Vid15, AC15, BFE15, BW10, CTGS15, EVV11, MR14, NEAC10, RR16, RCG+11]. Years [FMOMG16]. Young [LH08, SBN16, Fer14, RR11, RR09, SBN14, THV+15].

Zealand [VT07a, BC05, HP11, KYA13b, KYA13c, VT07b, YJY08]. zero [Mas15]. zone [WLSC09].

References

Al-Abdali:2016:TCS


Afari:2012:EUG


Ambusaidi:2017:IOS


Al-Amoush:2014:BAC

REFERENCES


REFERENCES


Andra:2015:RMR


Alajmi:2016:AGS


Alegria:2014:SEL


Alsawaie:2012:NSB


Anderson:2007:ULS

Anderson:2014:NPS

Annetta:2004:ASP

Ambrose:2014:SEB

Ariasi:2014:CPO

Amador:2016:PNP
REFERENCES


REFERENCES


REFERENCES


[APCK12] Mehmet Aydeniz, Aybuke Pabuccu, Pınar Seda Cetin, and Ebru Kaya. Argumentation and students’ conceptual understanding
REFERENCES


REFERENCES


REFERENCES

Babai:2012:PIC

Badillo:2015:ARY

Bergeron:2017:ESP

Blomeke:2015:TCD

Budiman:2014:ECC
REFERENCES


REFERENCES


REFERENCES


REFERENCES


REFERENCES

Baruch:2016:PSV

Baram-Tsabari:2011:QGG

Bursal:2010:TPE

Burny:2013:CSA

Berlin:2010:PMS
Babai:2010:EIA


Cataloglu:2014:ECS


Coll:2006:IFY


Calik:2007:EPS


Calik:2009:IEA

REFERENCES


Huey-Por Chang, Chin-Chang Chen, Gwo-Jen Guo, Yeong-Jin Cheng, Chen-Yung Lin, and Tsung-Hau Jen. The development of a competence scale for learning science: inquiry and


[Cha10]
REFERENCES


REFERENCES


References


Cortina:2015:WLH


Cormas:2017:PTR


Chick:2012:TSL


Celik:2017:GCI


Champion:2011:CAS


REFERENCES

Demiray:2017:IPS


Davis:2015:WDU


Dalgety:2006:EFY


Dahsah:2008:TGS


Dankenbring:2016:EES

Chelsey Dankenbring and Brenda M. Capobianco. Examining elementary school students’ mental models of Sun–Earth relationships as a result of engaging in engineering design. *International Journal of Science and Mathematics Education*, 14(5):
REFERENCES


Nhalevilo:2013:RHI

Dawson:2006:ICT

Deliyianni:2016:RFP

Dhindsa:2008:CDL

Ding:2014:LLT
REFERENCES

Dunekacke:2015:EMC


Duchhardt:2017:AUM


Dolin:2010:RCP


Delice:2015:IRF


Dreher:2016:WUM


REFERENCES


REFERENCES


Engstrom:2011:CTS


Elia:2009:GAA


Even:2009:ATM


Everett:2008:PSE


Ekawati:2015:DIM


Emrullah Erdem. Erratum to: Mental computation: Evidence from fifth graders. *International Journal of Science and
REFERENCES


REFERENCES


REFERENCES

Ferrara:2014:HMW

Fazio:2014:MDL

Francisco:2012:SWR

Forgasz:2013:FIH

Friege:2006:TQK


REFERENCES

[135x681] REFERENCES

Guisasola:2009:DER


Gomez-Chacon:2015:SGW


Gilleece:2010:EMS


Goldston:2010:PAL


Goodchild:2009:ESM


**REFERENCES**


Gravemeijer:2017:WME

Gougis:2017:PSS

Guberman:2016:DAT

Guven:2009:FRP

Hakkarainen:2007:DCC
REFERENCES


Hofstein:2003:DLA


Han:2015:HST


Huang:2016:RAS


Hatisaru:2017:MKT


Hofstein:2011:SIT

Avi Hofstein, Ingo Eilks, and Rodger Bybee. Societal issues and their importance for contemporary science education – a pedagogical justification and the state-of-the-art in Israel, Germany,


REFERENCES


Huang:2013:UAT


Hatzikiriakou:2009:TDR


Hrin:2016:ESS


Hand:2007:UWL

REFERENCES


REFERENCES


REFERENCES


**Hung:2014**:WYL


**Hsieh:2013**:TSF


**Huang:2005**:CSC


**Hsu:2007**:PI


**Hsu:2016**:CAE


REFERENCES

Jao:2017:SPS

Jiang:2010:SST

Jacinto:2017:MPS

Jin:2016:UCI

Jack:2008:TET


REFERENCES


REFERENCES


REFERENCES


REFERENCES


REFERENCES

Kellner:2011:PTI

Kuchemann:2006:ISM

Kipnis:2008:ILS

Korner:2015:CAP

Kaasila:2012:MPR
REFERENCES


Kidron:2011:CKA


Karpudewan:2012:EGC


Kontorovich:2016:CSE


Kilinc:2017:SFI


Korpershoek:2015:RBS

Hanke Korpershoek, Hans Kuyper, and Greetje van der Werf. The relation between students’ math and reading ability and their mathematics, physics, and chemistry examination grades in secondary education. *International Journal of Science and
Knievel:2015:BKM


Kim:2013:TRI


Koponen:2013:PSP


Knipprath:2010:WPT


Ko:2010:MTC


Kariotoglou:2009:HST


Kock:2015:CCI


Kuwahara:2013:IPB


Kubiatko:2010:RBI


Keraro:2007:ECC


Laschke: 2013: EFM


Lawson: 2005: CHQ


Lee: 2008: IIS


Liu: 2014: ETM


Liu: 2014: TMP

Chia-Ju Liu and Wen-Wei Chiang. Theory, method and practice of neuroscientific findings in science education. *Intern-
REFERENCES


[LE06] Dorothy Langley and Bat-Sheva Eylon. Probing high school physics students’ views and concerns about learning activities.
REFERENCES


REFERENCES

Lin:2006:CTU

Lin:2012:ETS

Lin:2014:EST

Lin:2014:SNS

Lin:2016:DSE
Jing-Wen Lin. Do skilled elementary teachers hold scientific conceptions and can they accurately predict the type and source of students’ preconceptions of electric circuits? *International Journal of Science and Mathematics Education, 14(2s):287–307, July 2016. CODEN ????. ISSN 1571-0068 (print), 1573-1774 (elec-


REFERENCES

119

Liu:2008:TET


Lem:2015:CME


Lee:2005:UAI


Lazarowitz:2006:FAP


Lin:2014:CLC

REFERENCES


Tzu-Chien Liu, Yi-Chun Lin, and Chin-Chung Tsai. Identifying senior high school students’ misconceptions about statistical correlation, and their possible causes: an exploratory study

Leikin:2013:EPE


Lin:2010:LAS


Louis:2012:DSS


Lai:2015:HKG


Lawson:2008:CSM

[LOJ08] Anton E. Lawson, Michael Oehrtman, and Jamie Jensen. Connecting science and mathematics: The nature of scientific and


<table>
<thead>
<tr>
<th>Reference</th>
<th>Authors</th>
<th>Title</th>
<th>Source</th>
<th>URL</th>
</tr>
</thead>
</table>
REFERENCES

Lotter:2014:BCP


Lin:2007:MMD


Majidi:2014:CBK


Marra:2011:OPD


Maschietto:2015:AMZ

REFERENCES

Mellado:2008:CPP


Melville:2013:SIC


Mintzes:2004:UCC


McComas:2003:TCN


McGinnis:2003:CSM

REFERENCES


REFERENCES


REFERENCES


REFERENCES


[MNE12] Rachel Mamlok-Naaman and Ingo Eilks. Different types of action research to promote chemistry teachers’ professional development — a joined theoretical reflection on two cases from Israel and Germany. *International Journal of Science and Mathematics Education*, 10(3):581–610, June 2012. CODEN ????. ISSN
REFERENCES


[Morrison:2014:SPT]  Judith A. Morrison. Scientists’ participation in teacher professional development: the impact on fourth to eighth grade teachers’ understanding and implementation of inquiry science. *In-


Todd Milford, Shelley P. Ross, and John O. Anderson. An opportunity to better understand schooling: the growing presence


REFERENCES


REFERENCES


REFERENCES


[Neumann:2010:PES]

[Ng:2010:EA]

[Neber:2008:CHS]

[Niss:2017:ORS]

[Nunokawa:2004:SAP]
Ng:2016:SML


Newton:2011:ESP


Nicolaou:2016:HLA


Nantawanit:2012:PSC


Nehring:2017:CTQ

REFERENCES


REFERENCES


Oehrtman:2008:CSM


Osman:2014:IIM


Oliveira:2010:DET


Olteanu:2012:IEC


REFERENCES


[PB09] Robert B. Prophet and Nandkishor B. Badede. Language and student performance in junior secondary science examinations:
REFERENCES


REFERENCES


[Planinic2012] Maja Planinic, Zeljka Milin-Sipus, Helena Katic, Ana Susac, and Lana Ivanjek. Comparison of student understanding of line graph...

**Patterson:2004:CST**


**Panizzon:2008:APE**


**Pantziara:2015:SMM**


**Palla:2012:SSS**


**Petocz:2007:USC**


Pyzdrowski:2013:RAI


Pamuk:2017:MAS


Pauka:2005:VES


Paul:2014:UMS


Pimthong:2012:TLA

[PYR+12] Pattamaporn Pimthong, Naruemon Yutakom, Vantipa Roadrangka, Sudjid Sanguanruang, Bronwen Cowie, and Beverley


REFERENCES

Ronda:2017:MMT


Rogers:2007:EPD


Ranade:2006:DCP


Randler:2009:ETD


Reis:2013:IAK

REFERENCES


References

Reiss:2011:UPR

Rizk:2012:EBS

Raha:2010:AIJ

Robinson:2012:OTT

Ruthven:2009:COP
Reiss:2011:EPE


Ramnarain:2016:AGO


Rhoads:2011:TIE


Romine:2014:SIT


Rundgren:2010:CFV

Carl-Johan Rundgren and Lena A. E. Tibell. Critical features of visualizations of transport through the cell membrane — an empirical study of upper secondary and tertiary students’ meaning


[Sisman:2016:SSG] Gulcin Tan Sisman and Meral Aksu. A study on sixth grade students’ misconceptions and errors in spatial measure-


[SBK+14] Ana Susac, Andreja Bubic, Jurica Kaponja, Maja Planinic, and Marijan Palmovic. Eye movements reveal students’ strategies

Scataglini-Belghitar:2012:EAC


Siraj-Blatchford:2014:CPP


Siraj-Blatchford:2016:ECP


Seybold:2014:PCE


Scantlebury:2007:AIG


Stavy:2006:IRU


Sade:2003:TTE


Smith:2011:WTI

[SC11] Emma Smith and Sandra Cooke. ‘i was told it was going to be hard work but i wasn’t told it was going to be this much work’: the experiences and aspirations of undergraduate science students. *International Journal of Science and Mathematics Education*, 9(2):303–326, April 2011. CODEN ????. ISSN 1571-0068 (print), 1573-1774 (electronic). URL http://link.springer.com/article/10.1007/s10763-010-9228-1.

Sarkar:2014:BST


Schoerning:2014:EPE

REFERENCES

Schademan:2015:BCB


Simpson:2016:GBA


Shore:2012:PER


Saglam:2016:QRE


Seah:2016:ETP

REFERENCES


REFERENCES

Lin:2013:CP


Lin:2014:E


Shen:2017:ASD


Spektor-Levy:2009:TSC


Sun:2010:DVR


Sanchez-Matamoros:2015:DPS

Gloria Sánchez-Matamoros, Ceneida Fernández, and Salvador Llinares. Developing pre-service teachers’ noticing of students’ understanding of the derivative concept. *International Journal of
REFERENCES


Shahbari:2015:RCC


Shahbari:2017:MPS


Stamovlasis:2005:CVP


Sia:2012:HSS


Stylianides:2008:IGO

REFERENCES

164


**Su:2008:ECC**


**Sumpter:2013:TIB**


**Sumpter:2016:BPA**


**Sumpter:2016:IUS**


**Savinainen:2008:FCI**

REFERENCES


REFERENCES


[TBP17] Vahide Taskin, Sascha Bernholt, and Ilka Parchmann. Student teachers’ knowledge about chemical representations. Interna-
REFERENCES


REFERENCES


Tesfamariam:2017:NSD


Tippett:2017:FPK


Topcu:2013:PTE


Tao:2012:LTO


Treagust:2004:E


[TT07] Keith S. Taber and Kim Chwee Daniel Tan. Exploring learners’ conceptual resources: Singapore A Level students’ expla-

**Tobin:2014:PPB**


**Taylor:2003:ECC**


**Tang:2016:ISM**


**Tuan:2017:IIM**


**Tho:2017:SRR**

[TYW+17] Siew Wei Tho, Yau Yuen Yeung, Rui Wei, Ka Wing Chan, and Winnie Wing mui So. A systematic review of remote labora-


[VAF12] Sunitadevi Velayutham, Jill M. Aldridge, and Barry Fraser. Gender differences in student motivation and self-regulation in science learning: a multi-group structural equation modeling anal-


**Vitale:2012:UDS**


**Vallejo-Ruiz:2008:HSM**


**Venville:2005:SUA**


**Vlaardingerbroek:2007:EVB**

REFERENCES


REFERENCES


Wang:2016:DVO


Wu:2009:DIT


Wang:2012:DTA


Wong:2016:ACD


Watson:2012:LCM

REFERENCES


REFERENCES

Wu:2017:BMT


Wu:2008:FAT


Walter:2007:LIS


Watson:2008:SRV


Watson:2009:DSU


Wang:2008:ERT

[WL08] Jing-Ru Wang and Sheau-Wen Lin. Examining reflective thinking: A study of changes in methods students’ conceptions and


Waller:2017:MTP


Wood:2012:USV


Wilhelm:2013:IPT


Wang:2012:BMA


Waldrip:2012:DUI


REFERENCES


Yu:2015:ESP


Yang:2016:EEB


Yuenyong:2008:CTN


Yemen-Karpuzcu:2017:PMS


Yore:2008:MQR

REFERENCES


REFERENCES


