

**MODEL PELATIHAN TEKNOLOGI KREATIF UNTUK PENGUATAN TPACK
PADA GURU MUSIK SMA DI KOTA BANDUNG**

DISERTASI

Diajukan sebagai salah satu syarat untuk memperoleh gelar Doktor Pendidikan Seni



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SEKOLAH PASCA SARJANA
UNIVERSITAS PENDIDIKAN INDONESIA
BANDUNG
2025**

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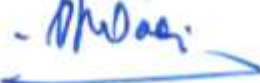
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KATA PENGANTAR

Puji dan syukur penulis panjatkan ke hadirat Tuhan Yang Maha Esa atas segala limpahan rahmat, taufik, dan hidayah-Nya sehingga penulis dapat menyelesaikan disertasi yang berjudul Model Pelatihan Teknologi Kreatif untuk Penguatan TPACK pada Guru Musik SMA di Kota Bandung. Disertasi ini disusun sebagai salah satu syarat untuk memperoleh gelar Doktor dalam bidang Pendidikan Seni pada Program Studi Pendidikan Seni, Sekolah Pascasarjana Universitas Pendidikan Indonesia.

Penyusunan disertasi ini dilandasi oleh semangat untuk turut berkontribusi dalam mengembangkan pendidikan musik di Indonesia, khususnya dalam menjawab tantangan abad ke-21 yang menuntut integrasi pengetahuan pedagogik, konten, dan teknologi dalam praktik pembelajaran. Penelitian ini diharapkan dapat menjadi bagian dari upaya memperkuat kompetensi guru musik, terutama dalam mengadopsi teknologi kreatif sebagai sarana pengembangan profesionalisme dan inovasi pembelajaran.

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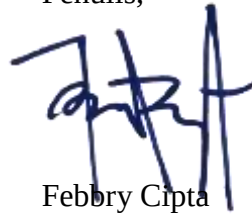
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ABSTRAK

Penelitian ini bertujuan untuk mengembangkan model pelatihan teknologi kreatif sebagai upaya penguatan TPACK pada guru musik SMA di Kota Bandung. Landasan utama dalam pengembangan model ini adalah konsep teknologi kreatif yang diaplikasikan sebagai tindakan mengada yang didukung oleh dimensi-dimensi *person, press, process*, dan *product*, secara terstruktur dan terukur. Penelitian berpijak pada paradigma pragmatisme, yang mana solusi atas masalah-masalah dibangun melalui pemahaman mendalam terhadap akar permasalahan yang sesungguhnya, didukung dengan cara kerja yang mempertimbangkan rasionalitas dan moralitas. Prosedur penelitian mengadopsi tahapan ADDIE (*analysis, design, development, implementation, evaluation*). Pada tahap analisis kebutuhan, melalui survei, wawancara, observasi, dan studi dokumen, ditemukan bahwa penguatan dibutuhkan secara khusus pada domain TK, TCK, dan TPK dalam kerangka TPACK. Desain pelatihan dikembangkan menggunakan pendekatan *backward design* yang menekankan pada penetapan hasil belajar terlebih dahulu, diikuti oleh perancangan penilaian dan aktivitas pembelajaran yang relevan dan terarah. Implementasi model dibagi ke dalam tiga segmen yaitu, 1) orientasi dan refleksi, yang membangun kesadaran akan pentingnya integrasi teknologi dan kreativitas; 2) kreasi dan eksplorasi, yang memberi ruang bagi guru untuk bereksperimen dengan perangkat lunak musik digital dan membangun materi ajar berbasis proyek; dan 3) simulasi, yang melibatkan praktik *microteaching*, refleksi kolektif, dan umpan balik konstruktif. Evaluasi pelatihan mengacu pada empat level evaluasi Kirkpatrick, di mana peserta memberikan reaksi positif pelatihan; menunjukkan peningkatan pengetahuan dan keterampilan pada domain TPACK terkait; perubahan perilaku guru mengaplikasikan teknologi kreatif dalam pengajaran; dan dampak inovatif pembelajaran musik di sekolah. Partisipan penelitian terdiri dari, 14 guru musik, satu instruktur pelatihan, tiga validator model, dan dua validator instrumen. Keberhasilan penguatan TPACK yang ditunjukkan oleh para peserta merupakan proyeksi eksistensial mereka yang otentik, estetik, dan etik. Pelatihan berbasis teknologi kreatif menjadi arena yang memfasilitasi timbal-balik nilai-nilai intrinsik dan ekstrinsik secara sadar, di mana peran dan tanggung jawab, keselarasan interaktivitas, dan pertimbangan aspek-aspek pedagogis dibangun guna mengonstruksi praksis edukatif yang adaptif dan inovatif.

Kata kunci: teknologi kreatif, TPACK, guru musik, pelatihan, eksistensi, musik digital.

ABSTRACT

This study aims to develop a creative technology training model as a strategic effort to enhance TPACK competencies among high school music teachers in Bandung, Indonesia. The conceptual foundation of this model lies in the integration of creative technology, conceptualized as an ontological act of bringing-forth (being), and retrieved by the structured and measurable application on the dimensions of person, press, process, and product. Grounded in a pragmatist paradigm, the study seeks context-responsive solutions based on a deep understanding of authentic problems and guided by rationality and morality considerations in educational practice. The research adopts the ADDIE model (analysis, design, development, implementation, evaluation) as its procedural framework. In the needs analysis phase, data were collected through surveys, interviews, observations, and document analysis, revealing that reinforcement was particularly needed in the TK, TCK, and TPK domains of the TPACK framework. The training model was designed using a backward design approach, prioritizing the formulation of learning outcomes, followed by the development of assessment strategies and relevant learning activities. The implementation process was structured into three segments, (1) orientation and reflection, fostering awareness of the significance of integrating technology and creativity in music teaching; (2) creation and exploration, enabling participants to experiment with digital audio workstations (DAWs) and develop project-based instructional materials; and (3) simulation, encompassing microteaching, collaborative reflection, and constructive feedback sessions. Training effectiveness was evaluated using Kirkpatrick's four-level evaluation model, demonstrating positive participant reactions, improved knowledge and skills in TPACK-related domains, observable behavioral changes in classroom technology use, and innovative impacts on music instruction in schools. Participants included 14 music teachers, one training instructor, three model validators, and two instrument validators. The achievement of TPACK strengthening shown by the participants is their authentic, aesthetic, and ethical existential projection. Creative technology-based training becomes an arena that facilitates the conscious reciprocity of intrinsic and extrinsic values, where roles and responsibilities, interactivity alignment, and consideration of pedagogical aspects are established to construct adaptive and innovative educational praxis.

Keywords: creative technology, TPACK, music teacher, training, existence, digital music.

DAFTAR ISI

LEMBAR HAK CIPTA	i
LEMBAR PENGESAHAN.....	ii
PERNYATAAN BEBAS PLAGIARISME	iii
KATA PENGANTAR	iv
ABSTRAK	vi
DAFTAR ISI.....	viii
DAFTAR TABEL.....	x
DAFTAR GAMBAR	xii
BAB I PENDAHULUAN	1
1.1. LATAR BELAKANG.....	1
1.2. RUMUSAN MASALAH.....	13
1.3. TUJUAN PENELITIAN	14
1.4. MANFAAT PENELITIAN	14
1.4.1. Manfaat Teoretis.....	15
1.4.2. Manfaat Praktis.....	15
1.5. RUANG LINGKUP PENELITIAN.....	16
BAB II TINJAUAN PUSTAKA.....	17
2.1. TPACK (<i>TECHNOLOGICAL PEDAGOGICAL AND CONTENT KNOWLEDGE</i>).....	17
2.1.1. Definisi dan Konsep Dasar TPACK.....	17
2.1.2. Lingkungan Belajar TPACK Guru Musik.....	19
2.1.3. Instrumen Pengukuran TPACK.....	21
2.2. TEKNOLOGI KREATIF DALAM PENDIDIKAN	25
2.2.1. Definisi Teknologi Kreatif	25
2.2.2. Dimensi Kreativitas dan Pengukurannya.....	29
2.2.3. Modernitas Pendidikan	41
2.2.4. Platform dan Fitur Teknologi Digital dalam Pembelajaran Musik.....	45
2.3. PEMBELAJARAN KREATIVITAS MUSIK	54
2.3.1. Motivasi dan Komunitas.....	58
2.3.2. Elemen Substantif Musik Digital	66
2.3.3. Instrumen.....	73
2.3.4. Sistem dan Bentuk Musik.....	74
2.4. BERBAGAI PENDEKATAN DALAM PEMBELAJARAN MUSIK	77
2.4.1. Gordon Music Learning Theory	79
2.4.2. Orff Schulwerk	83
2.4.3. Euritmika	85
2.4.4. Metode Kodály	86
2.4.5. Metode Suzuki.....	88
2.4.6. Pendekatan Terintegrasi Teknologi Digital	89
2.5. PELATIHAN GURU DALAM PENERAPAN TEKNOLOGI KREATIF.....	91
2.5.1. Konsep dan Pendekatan Pelatihan Guru.....	91
2.5.2. Strategi Efektif dalam Pelatihan Teknologi Kreatif	97
2.5.3. Membangun Desain Pelatihan Teknologi Kreatif	99
2.5.4. Orientasi Pelatihan Guru Musik	104
2.6. MODEL EVALUASI PROGRAM PELATIHAN	106
2.7. GAYA BELAJAR DAN KOMUNIKASI DALAM PEMBELAJARAN MUSIK	109
2.7.1. Gaya Belajar Siswa Remaja SMA.....	109
2.7.2. Kebutuhan Komunikasi dalam Pembelajaran Musik.....	113
2.7.3. Membangun Komunikasi dalam Pembelajaran Musik Digital	115
2.8. PENELITIAN TERDAHULU	119
2.9. KERANGKA PIKIR.....	126
BAB III METODE PENELITIAN	132
3.1. DESAIN PENELITIAN.....	132
3.2. PROSEDUR PENELITIAN.....	133

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3.2.1. Tahap Analisis.....	135
3.2.2. Tahap Desain.....	136
3.2.3. Tahap Pengembangan.....	139
3.2.4. Tahap Implementasi	140
3.2.5. Tahap Evaluasi	141
3.3. PARTISIPAN.....	141
3.4. TEKNIK DAN INSTRUMEN PENGUMPULAN DATA	143
3.4.1. Survei	143
3.4.2. Observasi	148
3.4.3. Wawancara	149
3.4.4. Studi dokumen.....	151
3.4.5. Kuesioner	153
3.4.6. Tes	156
3.4.7. FGD.....	156
3.5. VALIDITAS DAN RELIABILITAS	157
3.6. ANALISIS DATA	167
3.6.1. Analisis Data Kuantitatif	168
3.6.2. Analisis Data Kualitatif	169
BAB IV TEMUAN DAN PEMBAHASAN.....	174
4.1. RASIONALITAS TEKNOLOGI KREATIF SEBAGAI LANDASAN PENGEMBANGAN MODEL	174
4.1.1. Kreativitas Musik Terintegrasi Teknologi Digital.....	184
4.1.2. Teknologi Dalam Memperluas Ekspresi Artistik	190
4.1.3. Batasan Teknologi Kreatif Dalam Penguatan TPACK.....	195
4.2. GAMBARAN UMUM TPACK GURU MUSIK SMA DI KOTA BANDUNG	200
4.2.1. Teknologi Dalam Pembelajaran Musik	201
4.2.2. Hardware-Software Komputer dan Platform Media Sosial	203
4.2.3. Penggunaan Perangkat Lunak Komposisi Musik	211
4.2.4. Kompetensi Pedagogik Dalam Pengajaran.....	216
4.2.5. Pengembangan Bahan Ajar Terintegrasi Teknologi.....	218
4.2.6. Persepsi TPACK Guru Musik SMA Di Kota Bandung.....	222
4.3. RANCANG BANGUN MODEL PELATIHAN.....	254
4.3.1. Tujuan.....	255
4.3.2. Prosedur.....	256
4.3.3. Pendukung	260
4.3.4. Evaluasi	265
4.4. VALIDASI RANCANGAN MODEL.....	267
4.5. IMPLEMENTASI MODEL PELATIHAN TEKNOLOGI KREATIF	272
4.5.1. Preparatory Session	275
4.5.2. Program Execution	292
4.6. KREATIVITAS MUSIK DIGITAL	333
4.7. EFEKTIVITAS MODEL PELATIHAN TEKNOLOGI KREATIF.....	389
4.8. DAMPAK PELATIHAN TERHADAP PENGUATAN TPACK	409
4.9. INOVASI DALAM MODEL PELATIHAN	416
4.10. REFLEKSI ATAS REALITAS PELATIHAN.....	423
BAB V SIMPULAN, IMPLIKASI, DAN REKOMENDASI	429
5.1. SIMPULAN	429
5.2. IMPLIKASI	432
5.2.1. Implikasi Teoretis.....	432
5.2.2. Implikasi Praktis.....	433
5.2.3. Implikasi Kebijakan.....	433
5.3. REKOMENDASI UNTUK PENELITIAN SELANJUTNYA.....	434
DAFTAR PUSTAKA	435
LAMPIRAN-LAMPIRAN	

DAFTAR TABEL

Tabel 2. 1. Rubrik penilaian TPACK guru menggunakan artefak	24
Tabel 2. 2. Urutan sejarah penggunaan frase teknologi kreatif.....	25
Tabel 2. 3. Psikometrik - Big Five Personality Test	31
Tabel 2. 4. Kemampuan divergen – TTCT	32
Tabel 2. 5. Instrumen KEYS: Assessing the Climate for Creativity pada musik	33
Tabel 2. 6. Observasi lingkungan kreatif	34
Tabel 2. 7. Wawancara lingkungan kreatif	34
Tabel 2. 8. Kuesioner CPI pada guru musik	35
Tabel 2. 9. Task analysis.....	36
Tabel 2. 10. Rubrik penilaian CAT.....	37
Tabel 2. 11. Penggunaan rubrik CAT	38
Tabel 2. 12. Rubrik CPAM	38
Tabel 2. 13. Penggunaan rubrik CPAM	39
Tabel 2. 14. Kuesioner umpan balik pengguna atau publik	40
Tabel 2. 15. Kuesioner kepuasan pelatihan.....	107
Tabel 2. 16. Observasi perilaku peserta	107
Tabel 2. 17. Kompetensi Guru dalam PP No. 74 – 2008	120
Tabel 3. 1. Validator model pelatihan	139
Tabel 3. 2. Evaluasi 4 tahap	141
Tabel 3. 3. Penilaian diri (faktor internal).....	144
Tabel 3. 4. Jenis teknologi	146
Tabel 3. 5. Instrumen self-reported TPACK guru musik SMA	147
Tabel 3. 6. Lembar observasi berbasis praktik.....	149
Tabel 3. 7. Pedoman observasi.....	149
Tabel 3. 8. Pedoman wawancara.....	151
Tabel 3. 9. Kuesioner <i>self reported creativity (person, press, process)</i>	154
Tabel 3.10. Lembar penilaian produk kreatif.....	155
Tabel 3.11. Skor validasi instrumen survei pertama	158
Tabel 3.12. Skor validasi instrumen pelatihan	159
Tabel 3.13. Skor validitas konstruk dan reliabilitas soal tes	161
Tabel 3.14. Validitas dan reliabilitas instrumen self creativity report	164
Tabel 3.15. Faktor kontekstual.....	170
Tabel 3.16. Faktor konten	171
Tabel 3.17. Alur analisis data kualitatif	172
Tabel 4. 1. Pengetahuan dan keterampilan menggunakan music software	212
Tabel 4. 2. Kompetensi pedagogik dalam pengajaran terintegrasi teknologi	216
Tabel 4. 3. Pengembangan bahan ajar terintegrasi teknologi.....	218
Tabel 4. 4. Sebaran skor untuk faktor internal	220
Tabel 4. 5. Skor persepsi TPACK.....	224
Tabel 4. 6. Skor TPACK berdasarkan demografi	229
Tabel 4. 7. Analisis t-Test: Two-Sample Assuming Equal Variances	230
Tabel 4. 8. Analisis Anova: single factor.....	231
Tabel 4. 9. Korelasi antar domain TPACK.....	232
Tabel 4.10. Interpretasi kekuatan korelasi antar domain TPACK	233
Tabel 4.11. Tujuan pelatihan	256
Tabel 4.12. Integrasi tujuan khusus ke dalam segmentasi	259

Febry Cipta, 2025

**MODEL PELATIHAN TEKNOLOGI KREATIF UNTUK PENGUATAN TPACK PADA GURU MUSIK SMA
DI KOTA BANDUNG**

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Tabel 4.13. Isi materi pelatihan.....	260
Tabel 4.14. Struktur modul pelatihan.....	264
Tabel 4.15. Jenis instrumen dan aspek penilaian.....	266
Tabel 4.16. Model evaluasi program pelatihan.....	267
Tabel 4.17. Instrumen validasi model.....	268
Tabel 4.18. Indeks kelayakan isi.....	270
Tabel 4.19. Revisi model	273
Tabel 4.20. Rundown kegiatan	275
Tabel 4.21. Skor pre-tes dan post-tes.....	285
Tabel 4.22. Penilaian produk kreatif (<i>peer assessment</i>)	287
Tabel 4.23. <i>Rundown Program Execution</i>	308
Tabel 4.24. Skor pre-test.....	316
Tabel 4.25. Sebaran skor pre test	317
Tabel 4.26. Skor post-test	319
Tabel 4.27. Skor persepsi (<i>person, press, process</i>).....	322
Tabel 4.28. Skor penilaian produk.....	326
Tabel 4.29. Korelasi antar dimensi kreativitas.....	329
Tabel 4.30. Regresi linear berganda dimensi kreativitas	331
Tabel 4.31. Kepuasan peserta	390

DAFTAR GAMBAR

Gambar 1. 1. Pemetaan gap penelitian.....	8
Gambar 1. 2. Interaksi siswa SMA gen-Z pada teknologi digital.....	12
Gambar 2. 1. Irisan dalam kerangka kerja TPACK	18
Gambar 2. 2. Klasifikasi kontekstual pengembangan dan penerapan TPACK.....	21
Gambar 2. 3. Basic interface FL Studio	49
Gambar 2. 4. Fitur pada Sibelius Ultimate.....	50
Gambar 2. 5. Tampilan jendela utama pada Bandlab	51
Gambar 2. 6. Interface pada salah satu instrumen virtual dalam Kontakt Library.....	52
Gambar 2. 7. Hierarki aspek kreativitas musik	57
Gambar 2. 8. Contoh eksplorasi aspek ritmis	67
Gambar 2. 9. Eksplorasi aspek nada dengan ritmis pada DAW	68
Gambar 2. 10. Fitur generatif untuk pengembangan harmoni	70
Gambar 2. 11. Integrasi teknologi digital ke dalam pembelajaran musik.....	112
Gambar 2. 12. Kerangka pikir pengembangan model pelatihan	126
Gambar 3. 1. Desain konvergen.....	133
Gambar 3. 2. Model ADDIE	134
Gambar 3. 3. Time line penelitian.....	135
Gambar 4. 1. Ontologi dalam kreativitas musik	185
Gambar 4. 2. Fase kreativitas musik	186
Gambar 4. 3. Backward design pembelajaran musik.....	189
Gambar 4. 4. Bagan penggunaan hardware-software dan platform media sosial	204
Gambar 4. 5. Kerangka model pelatihan.....	255
Gambar 4. 6. Media digital format WAV	261
Gambar 4. 7. Media digital format MIDI.....	262
Gambar 4. 8. Timeline implementasi model.....	275
Gambar 4. 9. Foto diskusi	282
Gambar 4.10. Grafik kreativitas pada dimensi person, press, dan process	286
Gambar 4.11. Penyampaian materi teoretis oleh instruktur	309
Gambar 4.12. Demonstrasi DAW oleh instruktur.....	310
Gambar 4.13. Sesi eksplorasi peserta.....	312
Gambar 4.14. Sesi diskusi reflektif dan umpan balik	314
Gambar 4.15. Grafik kemajuan pemahaman teoretis TPACK.....	321
Gambar 4.16. Grafik dimensi kreativitas peserta.....	330
Gambar 4.17. Playlist Arrangement karya 01	337
Gambar 4.18. Penggunaan effect reverb dan limiter.....	339
Gambar 4.19. Preset gitar tremolo dalam instrumen virtual Direct Wave	340
Gambar 4.20. Playlist Arangement karya 02	341
Gambar 4.21. Instrumen sampler dengan insert atmosferik	343
Gambar 4.22. Playlist Arrangement karya 03.....	345
Gambar 4.23. Pengolahan tekstur musik	346
Gambar 4.24. Fitur Riff Machine pada karya 03	348
Gambar 4.25. Playlist Arrangement karya 04.....	349
Gambar 4.26. Sound sample Riser pada instrumen virtual Sampler.....	350

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**MODEL PELATIHAN TEKNOLOGI KREATIF UNTUK PENGUATAN TPACK PADA GURU MUSIK SMA
DI KOTA BANDUNG**

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Gambar 4.27. Playlist Arrangement karya 05.....	353
Gambar 4.28. Struktur kalimat tanya-jawab karya 05	354
Gambar 4.29. Penggunaan instrumen Slicer pada karya 06.....	357
Gambar 4.30. Struktur harmoni dan melodi	358
Gambar 4.31. Playlist Arrangement karya 07	360
Gambar 4.32. Penggunaan instrumen virtual FPC dan sound effect	361
Gambar 4.33. Playlist Arrangement karya 08.....	364
Gambar 4.34. Line bas sebagai unsur harmoni	365
Gambar 4.35. Playlist Arrangement karya 09.....	367
Gambar 4.36. Penggunaan effect	369
Gambar 4.37. Struktur harmoni	369
Gambar 4.38. Playlist Arrangement karya 10.....	371
Gambar 4.39. Fitur arpeggiator.....	372
Gambar 4.40. Playlist Arrangemen karya 11	374
Gambar 4.41. Instrumen virtual Pluck	375
Gambar 4.42. Playlist Arrangemen karya 12	378
Gambar 4.43. Pola sahut menyahut dan interlocking	379
Gambar 4.44. Harmoni paralel.....	382
Gambar 4.45. Playlist Arrangement karya 13.....	383
Gambar 4.46. Pendekatan kontrapung	386
Gambar 4.47. Penggunaan fitur slide dalam piano roll.....	388
Gambar 4.48. Pembelajaran kreativitas musik digital di SMAN 10	404
Gambar 4.49. Aktivitas pembelajaran di SMA BPI.....	406
Gambar 4.50. Wawancara kepada pimpinan sekolah	407

DAFTAR PUSTAKA

- Abernathy, D. (2019). ADDIE in Action: A Transformational Course Redesign Process. *Journal for the Advancement of Educational Research International*, 13(1), 8-19.
- Abramson, Robert M. (1996). Dalcroze Eurhythmics in Today's Music Classroom. *Music Educators Journal*, 82(3), 17-20.
- Alwasilah, A.C. (2014). *Islam, Culture, and Education*. Bandung: Remaja Rosdakarya.
- Amabile, T. M. (1982). Social psychology of creativity: A consensual assessment technique. *Journal of personality and social psychology*, 43(5), 997.
- Amabile, T. M., Conti, R., Coon, H., Lazenby, J., & Herron, M. (1996). Assessing the work environment for creativity. *Academy of management journal*, 39(5), 1154-1184.
- Anderson, G., & Cohen, M. (2015). Redesigning the identities of teachers and leaders: A framework for studying new professionalism and educator resistance. *Education Policy Analysis Archives*, 23, 85.
- Anderson, W. M., & Campbell, P. S. (2010). *Multicultural Perspectives in Music Education*. R&L Education.
- Angeli, C., & Valanides, N. (2009). Epistemological and methodological issues for the conceptualization, development, and assessment of ICT-TPCK: Advances in technological pedagogical content knowledge (TPCK). *Computers & Education*, 52(1), 154-168.
- Archambault, L., & Crippen, K. (2009). Examining TPACK among K-12 online distance educators in the United States. *Contemporary Issues in Technology and Teacher Education*, 9(1). Retrieved August 28, 2009, from <http://www.citejournal.org/vol9/iss1/general/article2.cfm>
- Ardichvili, A. (2010). Lev Semyonovich Vygotsky (1896 - 1934). Dalam 50 Pemikir Paling Berpengaruh Terhadap Dunia Pendidikan Modern, hal. 62-68. Laksana, Jogjakarta.
- Arieti, S. (1976). *Creativity: The magic synthesis*. Basic Books.

- Auh, M.-s. (2000). Assessing creativity in composing music: Product-Process-Person-Environment approaches. Centre for Research and Education in the Arts, University of Technology-Sydney.
- Avalos, B. (2011). Teacher professional development in Teaching and Teacher Education over ten years. *Teaching and Teacher Education*, 27(1), 10-20.
- Blakeslee, S. (2007). *The Body Has a Mind of Its Own: How Body Maps in Your Brain Help You Do (Almost) Everything Better*. Random House.
- Bandura, A. (1977). *Social Learning Theory*. Prentice-Hall.
- Bates, A. W., & Poole, G. (2003). *Effective Teaching with Technology in Higher Education: Foundations for Success*. Jossey-Bass.
- Bauer, W. (2010, March). Technological pedagogical and content knowledge for music teachers. In *Society for Information Technology & Teacher Education International Conference* (pp. 3977-3980). Association for the Advancement of Computing in Education (AACE).
- Bauer, W. I. (2014). *Music Learning Today: Digital Pedagogy for Creating, Performing, and Responding to Music*. Oxford University Press.
- Bauer, W. I., & Dammers, R. J. (2016). Technology in music teacher education: A national survey. *Research Perspectives in Music Education*, 18(1), 2-15.
- Bautista, A. (2016). Curriculum integration in arts education: connecting multiple art forms through the idea of 'space'. *Journal of Curriculum Studies* 48 (5), pp. 610-629.
- Bell, S. (2010). Project-Based Learning for the 21st Century: Skills for the Future. *The Clearing House: A Journal of Educational Strategies, Issues and Ideas*, 83(2), 39-43.
- Biggs, J. (1993). What do inventories of students' learning processes really measure? A theoretical review and clarification. *British journal of educational psychology*, 63(1), 3-19.
- Billett, S., Henderson, A., Choy, S., Dymock, D., Kelly, A., Smith, R., James, I., Beven, F., & Lewis, J. (2012). *Continuing Education and Training Models and Strategies: An Initial Appraisal*. National Centre for Vocational Education Research (NCVER).

- Bonnet, M. (2010). Martin Heidegger (1889 - 1976). Dalam 50 Pemikir Paling Berpengaruh Terhadap Dunia Pendidikan Modern, hal. 45-52. Laksana, Jogjakarta.
- Borko, H. (2004). Professional development and teacher learning: Mapping the terrain. *Educational Researcher*, 33(8), 3-15.
- Bourke, T., Lidstone, & Ryan. (2013). Schooling Teachers: Professionalism or disciplinary power? *Educational Philosophy and Theory* 47 (1), pp. 84-100.
- Branch, R. M. (2009). *Instructional Design: The ADDIE Approach*. Springer Science & Business Media.
- Brown, A. (2007). *Computers in music education. Amplifying musicality*. New York, NY: Routledge.
- Brown, J. (2022). Learning Styles and Communication Preferences in Music Education. *Journal of Educational Psychology*, 114(3), 389-402.
- Buchholz, B.A., DeHart, J., Moorman, G. (2020). Digital Citizenship During a Global Pandemic: Moving Beyond Digital Literacy. *Journal of Adolescent and Adult Literacy* 64 (1), pp. 11-17.
- Budiningsih, I., Soehari, T.D., Hidayati, R.N. (2020). Technology Training & Creativity for Strengthening Employees Innovative Behaviors. *Global Journal of Business and Social Science Review*, 8(3), pp.162–169.
- Caldwell, Bill. (1997). The Application of Dalcroze Eurhythmics in the General Music Classroom. *General Music Today*, (10)2, 10-13.
- Campbell, P. S., & Scott-Kassner, C. (2010). *Music in Childhood: From Preschool through the Elementary Grades*. Schirmer Cengage Learning.
- Candy, L., dan Edmonds, E. (2004). Collaborative expertise for creative technology design. *Proceedings: Computer Human Interaction, 6th Asia Pacific Conference, APCHI 2004, Rotorua, New Zealand, June 29 - July 2, 2004*
- Caputi, V., & Garrido, A. (2015). Student-oriented planning of e-learning contents for Moodle. *Journal of Network and Computer Applications*, 53, 115-127.
- Carstens, K.J., Mallon, J.M., Bataineh, M., Al-Bataineh, A. (2021). Effects of Technology on Student Learning. *The Turkish Online Journal of Educational Technology*, 20(1), pp. 105-113.

- Cipta, F. (2020). Digital Audio Workstation in Music Self-Learning (A Design Based Research). *Proceedings of the 3rd International Conference on Arts and Design Education (ICADE)*, pp. 208-212.
- Cipta, F., Masunah, J., & Milyartini, R. (2023). Use of ICT as a Music Teaching Material Development Tool. In *Fifth International Conference on Arts and Design Education (ICADE 2022)* (pp. 585-597). Atlantis Press.
- Cipta, F., Sukmayadi, Y., Milyartini, R., Kholid, D. M., & Gunara, S. (2024). Technological Pedagogical and Content Knowledge (TPACK) Integration in Teaching Music: A Perception of High School Music Teacher. *Jurnal Paedagogy*, 11(2), 252-264.
- Connor, A. M., & Marks, S. (Eds.). (2016). *Creative technologies for multidisciplinary applications*. Hershey: IGI Global.
- Cook, J. (2006). *Teaching Suzuki Piano: Ten Teacher's Viewpoints*. Summy-Birchard Inc.
- Crawford, R. (2017). Curriculum stasis: the disconnect between music and technology in the Australian curriculum. *Technology, Pedagogy and Education* 26 (3), pp. 347-366.
- Creswell, J. W. (2014). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches* (4th ed.). Sage Publications.
- Danielsen, A. (2018). Time and Time Again: Repetition and Difference in Repetitive Music. (in) *Over and Over: Exploring Repetition in Popular Music*. Bloomsbury Publishing.
- Darling-Hammond, L., Hyler, M. E., & Gardner, M. (2017). *Effective Teacher Professional Development*. Palo Alto, CA: Learning Policy Institute.
- Davidova, J. (2019). Music teacher's competences in the 21 century. *Pedagogika*, 134 (2), pp. 99-108.
- Denzin, N. K., & Lincoln, Y. S. (2011). *The Sage Handbook of Qualitative Research*. Sage Publications.
- Desimone, L. M. (2009). Improving Impact Studies of Teachers' Professional Development: Toward Better Conceptualizations and Measures. *Educational Researcher*, 38(3), 181-199.

- Dewey, J. (1933). *How We Think*. Boston: D.C. Heath and Company.
- Dillenbourg, P. (1999). What do you mean by collaborative learning? In P. Dillenbourg (Ed.), *Collaborative-learning: Cognitive and Computational Approaches* (pp. 1-19). Oxford: Elsevier.
- Doe, J. (2019). Enhancing Music Teachers' Competence through Digital Technology Training. *Journal of Music Education Technology*, 15(2), 123-135.
- Erikson, E. (1959). *Theory of identity development*. E. Erikson, *Identity and the life cycle*. Nueva York: International Universities Press.
- Ertmer, P. A., & Ottenbreit-Leftwich, A. T. (2017). Teacher technology change: How knowledge, confidence, beliefs, and culture intersect. *Journal of Research on Technology in Education*, 42(3), 255-284.
- Farrell, T. S. C. (2007). *Reflective Language Teaching: From Research to Practice*. London: Continuum.
- Fleming, N. (2001). *Teaching and Learning Styles: VARK Strategies*. Christchurch, New Zealand: N.D. Fleming.
- Fullan, M. (2007). *The New Meaning of Educational Change*. New York: Teachers College Press.
- Gagné, R. M. (1985). *The Conditions of Learning and Theory of Instruction*. Holt, Rinehart, and Winston.
- Gall, Marina. (2017). Tpack and music teacher education. *The Routledge Companion to Music, Technology, and Education*, pp. 305-318.
- Gardner, H. (1999). *Intelligence Reframed - Multiple Intelligences for the 21st Century*. New York: Basic Book.
- Garet, M. S., Porter, A. C., Desimone, L., Birman, B. F., & Yoon, K. S. (2001). What makes professional development effective? Results from a national sample of teachers. *American Educational Research Journal*, 38(4), 915-945.
- Garrido, D.C. (2019). Digital technology in Music Education: A review of the literature. *Revista Electronica Complutense de Investigacion en Educacion Musical* 16, pp. 43-55.

- Gaunt, H. (2016). Collaborative learning in higher music education. *Collaborative Learning in Higher Music Education*, pp. 1-281.
- Goodkin, D. (2004). *Play, Sing, & Dance: An Introduction to Orff Schulwerk*. Schott.
- Gordon, E.E. (1980) *Learning Sequences In Music : Skill, Content, And Patterns*. Chicago: GIA Publications Inc.
- Green, L. (2017). *How popular musicians learn: A way ahead for music education*. Routledge.
- Guskey, T. R. (2002). Professional Development and Teacher Change. *Teachers and Teaching*, 8(3), 381-391.
- Gustina, S., Cipta, F., & Sutanto, T.S. (2024). *Pemanfaatan Media Digital untuk Meningkatkan HOTS Generasi Z di Era Society 5.0*. Laporan Penelitian. Universitas Pendidikan Indonesia. Bandung.
- Hammond, L. (2017). Teacher education around the world: What can we learn from international practice? *European Journal of Teacher Education*, 40(3), pp. 291–309.
- Hargie, O. (2011). *Skilled Interpersonal Communication: Research, Theory, and Practice*. London: Routledge.
- Harris, J., & Hofer, M. (2015). Technological pedagogical content knowledge (TPACK) in action: A descriptive study of secondary teachers' curriculum-based, technology-related instructional planning. *Journal of Research on Technology in Education*, 43(3), 211-229.
- Harsono. (2008). Student-Centered Learning di Perguruan Tinggi. *Jurnal Pendidikan Kedokteran dan Profesi Kesehatan Indonesia*. 3(1), pp. 4-8
- Hasbullah. (2015). *Dasar-Dasar Ilmu Pendidikan*. Depok: Rajagrafindo Persada.
- Hattie, J., & Timperley, H. (2007). The Power of Feedback. *Review of Educational Research*, 77(1), 81-112.
- Heidegger, M. (1977). *The Question Concerning Technology and Other Essays* (W. Lovitt, Trans.). Harper & Row. (Original work published 1954). London: Garland Publishing.

- Heidegger, M. (1962). *Being and Time* (J. Macquarrie & E. Robinson, Trans.). Blackwell. (Original work published 1927)
- Hope, B.G., dan Fergusson, M. (2002). The Challenge of Teaching Research Skills to Information Systems and Technology Students. (in)Challenges of Information Technology Education in the 21st Century, pp 25-40. Idea Group Publishing.
- Horton, P.W. (2022). *Creativity and Technology in Music Teaching and Learning*. Doctoral disertation, Universitas Northwestern University, Evanston, Illinois: USA.
- Hysa, E. (2013). Defining a 21st Century Education: Case Study of Development and Growth Course. *Journal of Educational and Social Research*, 3(7), pp. 704-709.
- Johanson, G. A., & Brooks, G. P. (2010). Initial scale development: Sample size for pilot studies. *Educational and Psychological Measurement*, 70(3), 394-400.
- Johnson, D. W., & Johnson, R. T. (2009). An Educational Psychology Success Story: Social Interdependence Theory and Cooperative Learning. *Educational Researcher*, 38(5), 365-379.
- Johnson, M. (2022). Impact of Music Learning Apps on Teacher Competence. *Journal of Educational Technology in Music*, 18(4), 256-270.
- Johnson, M., & Thompson, R. (2022). The Impact of Visual Aids on Learning Music: A Study of Visual Learners. *Journal of Music Education Technology*, 15(2), 89-104.
- Jones, A., & Dexter, S. (2016). How teachers learn: The roles of formal, informal, and independent learning. *Educational Technology Research and Development*, 58(3), 337-357.
- Jones, A., Smith, R., & Patel, S. (2024). Enhancing Kinesthetic Learning in Music Education through Digital Technology. *Journal of Music Technology and Education*, 13(1), 45-59.
- Joyce, B., Weil, M., & Calhoun, E. (2015). *Models of teaching* (9th eds.). Routledge.

- Juntunen, Marja-Leena. (2004). The Dalcroze Approach: Experiencing and Knowing Music through Eurhythmics. *International Journal of Music Education*, 22(2) 117-125.
- Kanli, E. (2020). Assessment of creativity: Theories and methods. IntechOpen. <https://doi.org/10.5772/intechopen.93971>
- Kingsley, T., & Tancock, S. (2014). Internet inquiry: Fundamental competencies for online comprehension. *The Reading Teacher*, 67(5), 389-399.
- Kirkpatrick, J. D., & Kirkpatrick, W. K. (2016). Kirkpatrick's four levels of training evaluation. Association for Talent Development (ATD Press).
- Koehler, M. J., Mishra, P., & Yahya, K. (2007). Tracing the development of teacher knowledge in a design seminar: Integrating content, pedagogy, and technology. *Computers and Education*, 49(3), 740–762.
- Kolb, D. A. (1984). *Experiential Learning: Experience as the Source of Learning and Development*. Prentice Hall.
- Krason, C. (2011). The Importance of Parental Involvement in the Suzuki Method. *Music Educators Journal*, 97(4), 50-54.
- Krueger, R. A., & Casey, M. A. (2015). *Focus Groups: A Practical Guide for Applied Research* (5th ed.). SAGE Publications.
- Kyndt, E., Gijbels, D., Grosemans, I., & Donche, V. (2013). Teachers' everyday professional development: Mapping informal learning activities, antecedents, and learning outcomes. *Review of Educational Research*, 83(2), 141-176.
- Lee, J., & Kim, H. (2021). Visual Learning and Music Notation: Enhancing Music Education Through Diagrammatic Representation. *International Journal of Music Education*, 39(1), 75-88.
- Lee, J., & Kim, H. (2023). Interactive Simulations and Kinesthetic Learning: Improving Music Skills through Digital Tools. *International Journal of Music Education*, 41(2), 147-161.
- Lee, J., & Park, S. (2021). The Effects of Timely and Specific Feedback on Student Learning in Music Education. *Journal of Music Education Research*, 32(3), 225-239.

- Lim, V. F., & Tan, S. K. Y. (2018). Developing multimodal literacy through teaching the critical viewing of films in Singapore. *Journal of Adolescent & Adult Literacy*, 62(3), 291-300.
- Lin, Tzu-Chiang, dkk. (2013). Identifying Science Teachers' Perceptions of Technological Pedagogical and Content Knowledge (TPACK). *Journal of Science Education and Technology*, 22(3), pp. 325-336.
- Lindström, L. (2006). Creativity: What is it? Can you assess it? Can it be taught?. *International Journal of Art & Design Education*, 25(1), 53-66.
- Loucks-Horsley, S., Stiles, K. E., Mundry, S., Love, N., & Hewson, P. W. (2010). *Designing professional development for teachers of science and mathematics*. Corwin Press.
- Loughran, J. J. (2002). Effective Reflective Practice: In Search of Meaning in Learning about Teaching. *Journal of Teacher Education*, 53(1), 33-43.
- Mader, A., dan Dertien, E. (2014). How to educate for creativity in creative technology?. Paper presented at 16th International Conference on Engineering and Product Design (E&PDE 2014), pp. 562-567, Enschede, Netherlands.
- Malthouse, R., & Roffey-Barentsen, J. (2013). Reflective practice in education and training. *Reflective Practice in Education and Training*. L.A.: Learning Matters
- Manuel, F.D. (2014). The effect of training & development and employee engagement on perceived business performance. Doctoral dissertation: Gordon Institute of Business Science, University of Pretoria.
- Merriam, S. B., Caffarella, R.S., & Baumgartner, L. M. (2007). *Learning in adulthood: A comprehensive guide* (3rd ed). John Wiley & Sons.
- Martinez, A., & Garcia, P. (2024). Interactive Music Learning: The Role of Digital Tools in Supporting Visual Learners. *Music Technology Review*, 28(3), 142-156.
- Maslow, A. H. (1943). A Theory of Human Motivation. *Psychological Review*, 50(4), 370-396.

- Matzat, U. (2018). Reducing problems of sociability in online communities: Integrating online communication with offline interaction. *American Behavioral Scientist*, 53(8), 1244-1267.
- Mayes, Terry. & Freitas, Sara de. (2013). *Technology-Enhanced Learning: The Role of Theory*. Dalam *Rethinking Pedagogy for a Digital Age: Designing for 21st Century Learning* (Second Edition), pp. 17-30. Routledge, New York and London.
- Mazzola, G., Park, J., & Thalmann, F. (2011). *Musical creativity: Strategies and tools in composition and improvisation*. Springer.
- McCall, J. (2005). The Talent Education School of Shinichi Suzuki. *International Journal of Music Education*, 23(2), 175-182.
- McLean, K. C., & Syed, M. U. (Eds.). (2015). *The Oxford handbook of identity development*. Oxford University Press.
- Mehrabian, A. (1972). *Nonverbal Communication*. Chicago: Aldine-Atherton.
- Merrill, M. D. (2002). First Principles of Instruction. *Educational Technology Research and Development*, 50(3), 43-59.
- Miles, M. B., & Huberman, A. M. (1994). *Qualitative Data Analysis: An Expanded Sourcebook* (2nd ed.). Sage Publications.
- Mishra, P., dan Koehler, M.J. (2006). Technological pedagogical content knowledge: a framework for teacher knowledge. *Teachers College Record*, 108(6), 1017–1054.
- Morgan, D. L. (2007). Paradigms lost and pragmatism regained: Methodological implications of combining qualitative and quantitative methods. *Journal of Mixed Methods Research*, 1(1), 48-76.
- Mulyatiningsih, E. (2011). *Riset Terapan Bidang Pendidikan dan Teknik*. Yogyakarta: UNY Press
- Nijs, L. (2018). Dalcroze meets technology: integrating music, movement and visuals with the Music Paint Machine. *Music Education Research* 20 (2), pp. 163-183.
- Nugroho, B. (2019). Infrastruktur Pendidikan di Kota Bandung. *Jurnal Infrastruktur dan Pendidikan*, 6(2), 89-102.

- Odendaal, A. (2013). Perceptual learning style as an influence on the practising of instrument students in higher music education.
- Opfer, V. D., & Pedder, D. (2011). Conceptualizing teacher professional learning. *Review of Educational Research*, 81(3), 376-407.
- Papert, S. (1980). *Mindstorms: Children, Computers, and Powerful Ideas*. Basic Books.
- Partti, Heidi. (2012). Learning from cosmopolitan digital musicians: Identity, musicianship, and changing values in (in)formal music communities. Doctoral dissertation: Sibelius Academy. Faculty of Music Education, Jazz and Folk Music.
- Pećanac, R., Jeremić, B., Milenović, Z. (2016). Digital media in the teaching of music education. *The New Educational Review*. Vol. 43, pp. 236-247.
- Peppler, K. (2017). Interest-Driven Music Education: Youth, Technology, and Music Making Today, pp. 191-202. (in) *The Oxford Handbook of Technology and Music Education*, Oxford Handbooks. S.A. Ruthmann, and Roger Mantie (eds).
- Piaget, J. (1970). *Science of Education and the Psychology of the Child*. New York: Orion Press.
- Porras-Hernández, L. H., & Salinas-Amescua, B. (2013). Strengthening TPACK: A broader notion of context and the use of teacher's narratives to reveal knowledge construction. *Journal of Educational Computing Research*, 48(2), 223-244.
- Portowitz, A., Peppler, K. A., & Downton, M. (2014). In Harmony: A technology-based music education model to enhance musical understanding and general learning skills. *International Journal of Music Education*, 32(2), 242–260.
- Prasetyo, W. (2018). Kebijakan Pemerintah Daerah dalam Mendukung Pendidikan di Bandung. *Jurnal Kebijakan Publik*, 9(2), 56-70.
- Prasojo, L.D., dan Yuliana, L. (2021). HOW IS SOCIAL MEDIA USED BY INDONESIAN SCHOOL PRINCIPALS FOR INSTRUCTIONAL LEADERSHIP? *Cakrawala Pendidikan*, 40(1), pp. 70-80.
- Prayitno. (2009). *Dasar Teori dan Praksis Pendidikan*. Jakarta: Gramedia.

- Prensky, M. (2010). *Teaching Digital Natives: Partnering for Real Learning*. Corwin Press.
- Pribadi, B. A. (2020). Desain dan pengembangan program pelatihan berbasis kompetensi implementasi model ADDIE. Kencana.
- Rahmawati, T. (2020). Dinamika Kegiatan Akademik di Kota Bandung. *Jurnal Komunikasi dan Pendidikan*, 5(4), 110-125.
- Raja, R. dan Nagasubramani, P.C. (2018). Impact of modern technology in education. *Journal of Applied and Advanced Research*, 3(Suppl. 1), pp. S33-S353.
- Roberts, T., & Martinez, L. (2021). Practical Activities and Kinesthetic Learning in Music: A Study of Effective Teaching Methods. *Music Education Research*, 23(4), 471-486.
- Robinson, K., & Aronica, L. (2015). *Creative Schools: The Grassroots Revolution That's Transforming Education*. Viking.
- Rodgers, C. (2002). Defining Reflection: Another Look at John Dewey and Reflective Thinking. *Teachers College Record*, 104(4), 842-866.
- Rosenberg, J., Greenhalgh, S., & Koehler, M. (2015, March). A performance assessment of teachers' TPACK using artifacts from digital portfolios. In *Society for Information Technology & Teacher Education International Conference* (pp. 3390-3397). Association for the Advancement of Computing in Education (AACE).
- Reeves, T.C. (1998). *The Impact of Media and Technology in Schools. A Research Report prepared for The Bertelsmann Foundation*
- Rhodes, M. (1961). An analysis of creativity. *The Phi delta kappan*, 42(7), 305-310.
- Right, A. (2021). *Survival Teacher*. Yogyakarta: Noktah.
- Rosenberg & Koehler. (2015). Context and Technological Pedagogical Content Knowledge (TPACK): A Systematic Review, *Journal of Research on Technology in Education*, 47:3, 186-210.
- Rothenberg, A. (1996). The Janusian process in scientific creativity. *Creativity research journal*, 9(2-3), 207-231.
- Sadulloh, U. (2011). *Pengantar Filsafat Pendidikan*. Bandung: Alfabeta.

- Salahudin, A. (2021). *Filsafat Ilmu: Menelusuri Jejak Integrasi Filsafat, Sains, dan Sufisme-Rajawali Pers*. PT. RajaGrafindo Persada.
- Santrock, J. W. (2011). *Adolescence* (14th ed.). McGraw-Hill Education.
- Sarrazin, N. (2016). *Music and the Child*. Open SUNY Textbooks.
- Sauri, S., Gunara, S., dan Cipta, F. (2022). Establishing the identity of insan kamil generation through music learning activities in pesantren. *Heliyon*, 8(7).
- Schlienger, Dominik. (2022). *Developing ALPS – Notes on Agency in Technology*. Doctoral Thesis, Applied Study Programme, Sibelius Academy Of The University Of The Arts Helsinki
- Schmidt, D. A., Baran, E., Thompson, A. D., Mishra, P., Koehler, M. J., & Shin, T. S. (2009). Technological pedagogical content knowledge (TPACK) the development and validation of an assessment instrument for preservice teachers. *Journal of research on Technology in Education*, 42(2), 123-149.
- Schön, D. A. (1983). *The Reflective Practitioner: How Professionals Think in Action*. New York: Basic Books.
- Schrump, L., & Levin, B. B. (2015). *Leading 21st Century Schools: Harnessing Technology for Engagement and Achievement*. Thousand Oaks, CA: Corwin.
- Seitz, Jayne. (1995). The Effects of Dalcroze Eurhythmics Instruction on Selected Music Competencies of Third- and Fifth-Grade General Music Students. *Journal of Research in Music Education*, (43)2, 170-182.
- Skinner, B. F. (1953). *Science and Human Behavior*. Macmillan.
- Smaldino, S. E., Lowther, D. L., & Mims, C. (2018). *Instructional Technology and Media for Learning* (12th ed.). Pearson.
- Smith, B. P. (2011). Motivation to learn music. *MENC handbook of research on music learning*, 265-299.
- Smith, L. (2010). Jean Piaget (1896 - 1980). Dalam 50 Pemikir Paling Berpengaruh Terhadap Dunia Pendidikan Modern, hal. 69-79. Laksana, Jogjakarta.
- Smith, L., & Jones, K. (2021). Nonverbal Communication Strategies for Enhancing Music Learning: A Case Study. *Music Education Research*, 23(4), 471-486.

- Smith, L., Jones, K., & Wright, D. (2023). Video Demonstrations in Music Education: Effects on Visual Learners' Skill Development. *Journal of Educational Media*, 31(4), 204-219.
- Smith, R. (2017). The impact of online professional development on teacher quality and student achievement. *Journal of Educational Technology*, 46(4), 331-345.
- Sorah, D.W. (2012). The Effects of Music Teacher Beliefs, Training, and Resources on Use of Technology. Doctoral dissertation: Florida State University.
- Soszyński, Piotr. (2022) Learning ecology of music teachers' TPACK. *Technology, Pedagogy and Education*, 31(1), 85-102.
- Susilo, A. (2018). Peran Kota Bandung dalam Peningkatan Kualitas Pendidikan Nasional. *Jurnal Pendidikan Indonesia*, 7(3), 45-58.
- Sweller, J. (1988). Cognitive load during problem solving: Effects on learning. *Cognitive Science*, 12(2), 257-285.
- Thompson, R., Johnson, K., & Wright, P. (2023). Feedback and Motivation: Enhancing Music Learning through Constructive Criticism. *International Journal of Music Teaching and Learning*, 46(2), 195-208.
- Thomas, J. W. (2000). A Review of Research on Project-Based Learning. Autodesk Foundation.
- Timperley, H., Wilson, A., Barrar, H., & Fung, I. (2007). Teacher professional learning and development. Best Evidence Synthesis Iteration (BES). Ministry of Education.
- Torrance, E. P. (1966). Torrance tests of creative thinking. Educational and psychological measurement.
- Tsubonou, Y., Tan, A.-G., & Oie, M. (Eds.). (2018). Creativity in music education. Springer.
- Vangrieken, K., Dochy, F., Raes, E., & Kyndt, E. (2015). Teacher collaboration: A systematic review. *Educational Research Review*, 15, 17-40.
- Valerio, Wendy H. (2000). Dalcroze Eurhythmics: Music Education through Movement. *Music Educators Journal*, 86(6), 27-31.

- Vescio, V., Ross, D., & Adams, A. (2008). A review of research on the impact of professional learning communities on teaching practice and student learning. *Teaching and Teacher Education*, 24(1), 80-91.
- Vygotsky, L. S. (1978). *Mind in Society: The Development of Higher Psychological Processes*. Cambridge, MA: Harvard University Press.
- Waddell, G., & Williamon, A. (2019). Technology use and attitudes in music learning. *Frontiers in ICT*, 6(11). <https://doi.org/10.3389/fict.2019.00011>
- Wang, Y., & Reeves, T. C. (2019). The effects of web-based learning environments on the motivation and engagement of students. *Educational Technology & Society*, 11(4), 205-219.
- Wenger, E. (1998). *Communities of Practice: Learning, Meaning, and Identity*. Cambridge University Press.
- Widyastuti, A. (2021). Inovasi Pendidikan di Kota Kreatif Bandung. *Jurnal Teknologi Pendidikan*, 10(3), 135-148.
- Widodo, C.S., dan Jasmadi, S.T.P. (2008). *Panduan menyusun bahan ajar berbasis kompetensi*. Jakarta: Elex Media Komputindo.
- Williams, A., & Adams, R. (2022). Quality Feedback in Music Education: Impacts on Technical Skill and Creative Development. *Journal of Educational Psychology*, 115(4), 543-559.
- Wilson, T., & Carter, P. (2023). The Role of Interpersonal Communication in Collaborative Music Ensembles. *Journal of Music Teaching and Learning*, 45(1), 65-78.
- Yin, Robert K. (2018). *Case Study Research and Applications: Design and Methods* 6th edition. Singapore: SAGE Publications, Inc.
- Zagalo, N., & Branco, P. (2015). The Creative Revolution that is Changing the World. In Zagalo, N., and Branco, P. (Eds.) *Creativity in the Digital Age* (pp. 3-15). Berlin: Springer.
- Zeichner, K., & Liston, D. P. (1996). *Reflective Teaching: An Introduction*. Mahwah, NJ: Lawrence Erlbaum Associates.

- Zhou, J. (2003). When the presence of creative coworkers is related to creativity: role of supervisor close monitoring, developmental feedback, and creative personality. *Journal of applied psychology*, 88(3), 413.
- Zuckerman, M., Kuhlman, D. M., Joireman, J., Teta, P., & Kraft, M. (1993). A comparison of three structural models for personality: the big three, the big five, and the alternative five. *Journal of personality and social psychology*, 65(4), 757.