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Original
research paper

Emergency Education as a Catalyst for Teacher Change: Extent and Correlates of the Class and Subject Teachers' Growth of Competences[2]

Extended summary

The paper examines the positive aspects of the changed way of teaching during the pandemic, examining the development of teacher competencies and the factors that contributed to or prevented it, as well as possible differences between classroom and subject teachers. Based on the research conducted during the pandemic, four domains of teacher competence were selected: general digital competence, pedagogical-digital competence, assessment competence, and competence for teaching differentiation. Self-efficacy of the teacher, reflexivity in work, and growth mindset were selected as personal factors relevant in the process of the competence development based on the literature review, which, apart from representing the characteristics of an effective teacher, are also the prerequisites for learning and development. Among the factors at the school level, pedagogical leadership, teacher autonomy, and collective cooperation are included as the characteristics of a school climate that supports teacher training. The online questionnaire developed for the research purposes was filled out by 314 teachers whose demographic characteristics reflect the general population of teachers in Serbia. On a seven-point scale, respondents rated their initial (pre-pandemic) and current competency levels on 18 items that operationalize four selected competency domains. In addition to the measures of the initial and current levels, the research also used a measure of progress which was expressed as their difference - for all four competencies. The questionnaire also contained items that measure selected personal and school factors on the Likert-type scales. The questionnaire showed good metric characteristics. Data analysis included t-test for dependent

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samples, t-test for independent samples, and the calculation of partial correlation. The results showed that teachers' competencies increased significantly in all four domains, mostly in the domain of the digital-pedagogical competence. Classroom teachers rated the levels of their initial competencies in the domain of general digital and pedagogical-digital competence lower than subject teachers. However, according to the results, classroom teachers made more progress than subject teachers. When it comes to correlations, partial correlations were calculated among the four measures of competency progress and six factors while controlling for the initial level of each competency. The results showed that, at the level of school factors, only cooperation in the collective achieves a significant correlation with the progress of the pedagogical-digital competence. Consistent with previous research, personal factors have been shown to be more closely related to achievement than school factors. Self-efficacy was a significant correlate of the pedagogical-digital competence, indicating that teachers who were more confident in the classroom were also more willing to transform their teaching practice for the needs of the digital medium. Growth mindset proved to be a significant correlate of progress in all four domains, although the significance of its correlation with the general digital competence was marginal. These finding indicate that the belief that abilities can be developed through learning and effort was a motivating factor that encouraged teachers to engage in the mastery of new practices. Finally, reflective practice in teaching was shown to be a correlate of all competencies, except for the competency for teaching differentiation, the development of which was apparently stimulated by factors that were not part of this study. This finding indicates that reflective practice served as a process through which teachers shaped and adjusted their practices during the implementation of distance learning, thus ensuring their development. Apart from the causal interpretation of these findings, these results seem to indicate that the opportunity for improvement was used more by quality teachers, since all three variables, in addition to being the factors of growth, are also the characteristics of a good teacher. Overall, these findings show that during the pandemic teachers did take the opportunity to improve their competencies, but also that this growth was not directed systemically, but that motivated and enthusiastic individuals managed their own development and change. Starting from the idea that the Covid crisis represented an opportunity for a change in educational processes, the paper presents recommendations aimed at nurturing and further developing good practices and competencies that education during the pandemic gave birth to. It is suggested to provide training adapted to different levels of teacher competencies, as well as professional development programs through which the development of reflexivity in teaching and growth mindset will be systematically supported, which this research identifies as the most important elements of the professional development of teachers.

References

- Anderson, L. W. (2013). *Nastava orijentisana na učenje: za nastavnike usmerene na postignuća.* Solun: Centar za demokratiju i pomirenje u jugoistočnoj Evropi.

- Azorín, C. (2020). Beyond COVID-19 supernova. Is another education coming? *Journal of Professional Capital and Community.* 5 (3–4), 381–390. https://doi.org/10.1108/JPCC-05-2020-0019

- Beardsley, M., Albó, L., Aragón, P. and Hernández-Leo, D. (2021). Emergency education effects on teacher abilities and motivation to use digital technologies. *British Journal of Educational Technology.* 52 (4), 1455–1477. https://doi.org/10.1111/bjet.13101

- Bridwell-Mitchell, E. N. (2015). Theorizing teacher agency and reform: How institutionalized instructional practices change and persist. *Sociology of Education.* 88 (2), 140–159. https://doi.org/10.1177/0038040715575559

- Bubb, S. and Jones, M. A. (2020). Learning from the COVID-19 home-schooling experience: Listening to pupils, parents/carers and teachers. *Improving Schools.* 23 (3), 209–222. https://doi.org/10.1177/1365480220958797

- Buđevac, N., Josić, S., Radišić, J. i Baucal, A. (2015). *Nastavnik kao refleksivni praktičar.* Republika Srbija: Ministarstvo prosvete, nauke i tehnološkog razvoja.

- Caprara, G. V., Barbaranelli, C., Steca, P. and Malone, P. S. (2006). Teachers' self-efficacy beliefs as determinants of job satisfaction and students' academic achievement: A study at the school level. *Journal of school psychology.* 44 (6), 473–490. https://doi.org/10.1016/j.jsp.2006.09.001

- Cheng, C. C. and Huang, K. H. (2018). Education reform and teacher agency. *Problems of Education in the 21st Century.* 76 (3), 286. https://doi.org/10.33225/pec/18.76.286

- Daiute, C., Kovács Cerović, T., Mićić, K., Sullu, B. and Vracar, S. (2020). Dynamic values negotiating geo-political narratives across a migration system. *Qualitative Psychology.* 7 (3), 367–383. https://doi.org/10.1037/qup0000166.

- Daniilidou, A., Platsidou, M. and Gonida, E. (2020). Primary school teachers' resilience: association with teacher self-efficacy, burnout and stress. *Electronic Journal of Research in Education Psychology.* 18 (52), 549–582. https://doi.org/10.25115/ejrep.v18i52.3487

- Doyle, O. (2020). COVID-19: Exacerbating educational inequalities. *Public Policy.* 1-10.

- Dweck, C. S. (1999). *Self-Theories: Their Role in Motivation, Personality, and Development.* Philadelphia, PA: Psychology Press.

- Dweck, C. S. and Leggett, E. L. (1988). A social-cognitive approach to motivation and personality. *Psychological Review.* 95 (2), 256–273. https://doi.org/10.1037/0033-295X.95.2.256

- Dweck, C. (2014). Teachers' Mindsets: "Every Student has Something to Teach Me" Feeling overwhelmed? Where did your natural teaching talent go? Try pairing a growth mindset with reasonable goals, patience, and reflection instead. It's time to get gritty and be a better teacher. *Educational horizons.* 93 (2), 10–15. https://doi.org/10.1177/0013175X14561420

- Dweck, C. S. and Yeager, D. S. (2019). Mindsets: A view from two eras. *Perspectives on Psychological science.* 14 (3), 481–496. https://doi.org/10.1177/1745691618804166

- European Agency for Development in Special Needs Education (2012). *Teacher education for inclusion: Profile of Inclusive teachers.* Retrieved July 7, 2022. from: https://www.european-agency.org/sites/default/files/profile_of_inclusive_teachers_en.pdf .

- Geijsel, F. P., Sleegers, P. J., Stoel, R. D. and Krüger, M. L. (2009). The effect of teacher psychological and school organizational and leadership factors on teachers' professional learning in Dutch schools. *The elementary school journal.* 109 (4), 406–427. https://doi.org/10.1086/593940

- Gero, G. P. (2013). *What drives teachers to improve? The role of teacher mindset in professional learning* (doctoral dissertation). Claremont: The Claremont Graduate University.

- Grewenig, E., Lergetporer, P., Werner, K., Woessmann, L. and Zierow, L. (2021). COVID-19 and educational inequality: How school closures affect low-and high-achieving students. *European economic review.* 140, 103920. https://doi.org/10.1016/j.euroecorev.2021.103920

- Habib, H. (2017). A study of reflective practice and its role for teachers. *International Journal of Creative Research Thoughts (IJCRT).* 5 (4), 944–947.

- Hallinger, P. and Heck, R. H. (1996). Reassessing the principal's role in school effectiveness: a review of empirical research, 1980–1995. *Educational Administration Quarterly.* 32 (1), 5–44. https://doi.org/10.1177/0013161X96032001002

- Hallinger, P. (2003). Leading educational change: reflections on the practice of instructional and instructional leadership. *Cambridge Journal of Education.* 33 (3), 329–351. https://doi.org/10.1080/0305764032000122005

- Hargreaves, A. (2019). Teacher collaboration: 30 years of research on its nature, forms, limitations and effects. *Teachers and Teaching.* 25 (5), 603–621. https://doi.org/10.1080/13540602.2019.1639499

- Hrevnack, J. R. (2011). Guided development of reflective thinking in the observations of classroom teachers by pre-service candidates. *Academy of Educational Leadership Journal.* 15 (2), 81.

- James, C. R., Dunning, G., Connolly, M. and Elliott, T. (2007). Collaborative practice: A model of successful working in schools. *Journal of Educational Administration.* 45 (5), 541–555. https://doi.org/10.1108/09578230710778187

- Jokić Zorkić, T., Mićić, K. and Kovács Cerović, T. (2021). Lost Trust? The Experiences of Teachers and Students during Schooling Disrupted by the Covid-19 Pandemic. *CEPS Journal.* 11, 195–218. https://doi.org/10.26529/cepsj.1150

- Korhonen, T., Juurola, L., Salo, L. and Airaksinen, J. (2021). Digitisation or digitalisation: Diverse practices of the distance education period in Finland. *CEPS Journal.* 11 (Special Issue), 165–193. https://doi.org/10.25656/01:23656

- Kovács Cerović, T., Mićić, K. and Vračar, S. (2021). A leap to the digital era – what are lower and upper secondary school students' experiences of distance education during the COVID-19 pandemic in Serbia? *European Journal of Psychology of Education.* 37, 745–764. https://doi.org/10.1007/s10212-021-00556-y.

- Larrivee, B. (2008). Development of a tool to assess teachers' level of reflective practice. *Reflective practice.* 9 (3), 341–360. https://doi.org/10.1080/14623940802207451

- Leithwood, K., Harris, A. and Hopkins, D. (2008). Seven strong claims about successful school leadership. *School leadership and management*. 28 (1), 27–42. https://doi.org/10.1080/13632430701800060

- Lin, W., Yin, H. and Liu, Z. (2022). The Roles of Transformational Leadership and Growth Mindset in Teacher Professional Development: The Mediation of Teacher Self-Efficacy. *Sustainability*. 14 (11), 6489. https://doi.org/10.3390/su14116489

- Lischka, A. E., Barlow, A. T., Willingham, J. C., Hartland, K. and Stephens, D. C. (2015). Mindset in professional development: Exploring evidence of different mindsets. In: Bartell, T. G., Bieda, K. N., Putnam, R. T., Bradfield, K. and Dominguez, H. (Eds.). *Proceedings of the 37th Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* (732–739). East Lansing: Michigan State University.

- Liu, S. and Hallinger, P. (2018). Principal instructional leadership, teacher self-efficacy, and teacher professional learning in China: Testing a mediated-effects model. *Educational administration quarterly*. 54 (4), 501–528. https://doi.org/10.1177/0013161X18769048

- Malmberg, L. E., Hagger, H. and Webster, S. (2014). Teachers' situation-specific mastery experiences: teacher, student group and lesson effects. *European Journal of Psychology of Education*. 29 (3), 429–451. https://doi.org/10.3102/0013189X20982255

- Martin, A. and Grudziecki, J. (2006). DigEuLit: Concepts and tools for digital literacy development. *Innovation in teaching and learning in information and computer sciences*. 5 (4), 249–267. https://doi.org/10.11120/ital.2006.05040249

- Mathew, P., Mathew, P. and Peechattu, P. J. (2017). Reflective practices: A means to teacher development. *APJCECT*. 3 (1), 126–131.

- McMillan, D. J., McConnell, B. and O'Sullivan, H. (2016). Continuing professional development–why bother? Perceptions and motivations of teachers in Ireland. *Professional development in education*. 42 (1), 150–167. https://doi.org/10.1080/19415257.2014.952044

- Mićić, K. and Vračar, S. (2022). Teachers' professional development during the Covid-19 pandemic: Extent and correlations of competences growth. *18th International Conference Days of Applied Psychology 2022: Current Challenges in Psychological Science, Book of abstracts*. Department of Psychology, Faculty of Philosophy, University of Niš, Serbia, pp 116-118. Retrieved September 30, 2022. from: https://www.psihologijanis.rs/dpp/DPP_Book%20of%20abstracts%202022.pdf.

- Mićić, K., Kovács Cerović, T. and Vračar, S. (2021). Trends in primary school teachers' experience over the first year of the COVID-19 pandemic in Serbia: A narrative analysis. *Psihološka istraživanja*. 24 (2), 163–182. https://doi.org/10.5937/psistra24-32799

- Myyry, L., Kallunki, V., Katajavuori, N., Repo, S., Tuononen, T., Anttila, H., Kinnunen, P., Haarala-Muhonen, A. and Pyörälä, E. (2022). COVID-19 Accelerating Academic Teachers' Digital Competence in Distance Teaching. *Frontiers in education*. 7, 1–11. https://doi.org/10.3389/feduc.2022.770094

- Oberfield, Z. W. (2016). A bargain half fulfilled: Teacher autonomy and accountability in traditional public schools and public charter schools. *American Educational Research Journal*. 53 (2), 296–323. https://doi.org/10.3102/0002831216634843

- OECD (2019). *TALIS 2018 results (Volume I): Teachers and school leaders as lifelong learners.* Paris: OECD Publishing. https://doi.org/10.1787/1d0bc92a-en

- OECD (2020). *TALIS 2018 Results (Volume II): Teachers and School Leaders as Valued Professionals.* Paris: OECD Publishing. https://doi.org/10.1787/19cf08df-en

- *Okvir digitalnih kompetencija: Nastavnik za digitalno doba 2019.* Beograd: ZUOV, MPNTR, ZVKOV. Posećeno 30. 7. 2022. na: https://prosveta.gov.rs/wp-content/uploads/2017/04/Okvir-digitalnih-kompetencija-Final-2.pdf.

- Opfer, V. D. and Pedder, D. (2011). Conceptualizing teacher professional learning. *Review of educational research.* 81 (3), 376–407. https://doi.org/10.3102/0034654311413609

- Ostovar-Nameghi, S. A. and Sheikhahmadi, M. (2016). From teacher isolation to teacher collaboration: Theoretical perspectives and empirical findings. *English Language Teaching.* 9 (5), 197–205. https://doi.org/10.5539/elt.v9n5p197

- Parker, G. (2015). Teachers' autonomy. *Research in Education.* 93 (1), 19–33.

- Pearson, L. C. and Hall, B. W. (1993). Initial construct validation of the teaching autonomy scale. *The Journal of Educational Research.* 86 (3), 172–178. https://doi.org/10.1080/00220671.1993.9941155

- Pitt, A. (2010). On having one's chance: Autonomy as education's limit. *Educational Theory.* 60 (1), 1–18. https://doi.org/10.1111/j.1741-5446.2009.00342.x

- Schleicher, A. (2020). *The Impact of COVID-19 on Education: "Insights from Education at a Glance 2020".* Paris: OECD Publishing.

- Selwyn, N. (2016). *Is technology good for education?.* Toronto: John Wiley & Sons.

- Skaalvik, E. M. and Skaalvik, S. (2014). Teacher self-efficacy and perceived autonomy: Relations with teacher engagement, job satisfaction, and emotional exhaustion. *Psychological reports.* 114 (1), 68–77. https://doi.org/10.2466/14.02.PR0.114k14w0

- Smith, R. C. (2000). Starting with Ourselves: Teacher-Learner Autonomy in Language Learning. In: Sinclair., B., McGrath, I. and Lamb, T. (Eds.) *Learner Autonomy, Teacher Autonomy: Future Directions* (89–99). Edinburgh Gate, Harlow: Pearson.

- Stančić, M. (2021). Čemu ocenjivanje u doba krize: perspektiva nastavnika na društvenim mrežama. In: Spasenović, V. (ur.). *Obrazovanje u vreme kovid krize: Gde smo i kuda dalje* (199–214). Beograd: Filozofski fakultet.

- Tančić, N. D. (2022). Prediktori profesionalnog razvoja nastavnika u inkluzivnoj školi. *Inovacije u nastavi.* 35 (1), 1–16. https://doi.org/10.5937/inovacije2201001T

- Thorn, W. and Vincent-Lancrin, S. (2021). *Schooling During a Pandemic: The Experience and Outcomes of Schoolchildren During the First Round of COVID-19 Lockdowns.* Paris: OECD Publishing. https://doi.org/10.1787/1c78681e-en.

- Tschannen-Moran, M. and Hoy, A. W. (2001). Teacher efficacy: Capturing an elusive construct. *Teaching and teacher education.* 17 (7), 783–805. https://doi.org/10.1016/S0742-051X(01)00036-1

- Tyack, D. and Tobin, W. (1994). The "grammar" of schooling: Why has it been so hard to change?. *American educational research journal.* 31 (3), 453–479. https://doi.org/10.2307/1163222

- Yoon, I. and Kim, M. (2022). Dynamic patterns of teachers' professional development participation and their relations with socio-demographic characteristics, teacher self-efficacy, and job satisfaction. *Teaching and Teacher Education*. 109, 103565. https://doi.org/10.1016/j.tate.2021.103565

- Zahid, M. and Khanam, A. (2019). Effect of Reflective Teaching Practices on the Performance of Prospective Teachers. *Turkish Online Journal of Educational Technology – TOJET*. 18 (1), 32–43.

- Zhang, X., Admiraal, W. and Saab, N. (2021). Teachers' motivation to participate in continuous professional development: relationship with factors at the personal and school level. *Journal of Education for Teaching*. 47 (5), 714–731. https://doi.org/10.1080/02607476.2021.1942804

- Zhao, Y. (2020). COVID-19 as a catalyst for educational change. *Prospects*. 49 (1–2), 29–33. https://doi.org/10.1007/s11125-020-09477-y