

ADOPTING PLACE-BASED LEARNING AS A PEDAGOGICAL STRATEGY IN TEXTILE TECHNOLOGY TEACHER EDUCATION

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ABSTRACT

Changes in education globally have ushered in several modifications in the context in which students learn. To align with these changes, teacher education must also be modified. Our line of reasoning in this study is that the use of place-based learning in teaching textile technology could transform student teachers' learning experiences and contribute to the development of 21st-century attributes. The community's involvement in place-based learning could also contribute to refining students' skills, consequently fostering their entrepreneurship in the textile field. A self-study genre of action research was adopted. Data was gathered through document analysis, reflective journals and focus group interviews with conveniently sampled Zimbabwean textile technology teacher education students. Thematic analysis revealed that place-based learning is an effective pedagogy for developing skills that students could utilise to create income-generating projects. We conclude that place-based learning as a teaching-learning approach contributed to students learning how to design and manage the project as well as develop transversal skills such as critical thinking, problem-solving, communication and teamwork. We suggest that place-based learning be utilised in other comparable Home Economics-related subjects to enable the fostering of similar 21st-century skills and competencies, with the bonus of benefits for the communities in which it is implemented.

KEYWORDS

curriculum, entrepreneurial skills, methodology, technical skills

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INTRODUCTION

Since the attainment of independence, higher education in Zimbabwe has supposedly been transforming from a colonial system that was narrow in scope and unresponsive to the needs of society (Garwe, Thondhlana & McGrath 2023), to an education system that embraces indigenous philosophies of learning (Balabuch & Stahl 2023). 'Supposedly' is used, because the policy on paper does not always succeed in practice. In accordance with the current trends in education, the textile technology (TT) curriculum in the context of primary teacher education in Zimbabwe was designed based on the main principles of Vygotsky's (1978:86) constructivist learning theory. The TT curriculum aims to create technologically literate student teachers with analytic and evaluative skills who can solve perceived challenges and problems in the textile education field. In addition to creating technologically literate student teachers, the curriculum also intends to instil entrepreneurial skills for income-generating projects because the new educational reforms require them to look beyond the classroom. This paper argues that these essential skills and competencies required in the 21st century are difficult to teach through traditional teaching and learning practices in which a student tends to be a passive recipient. Active, learner-centred pedagogies and activities that use practical learning opportunities from the real world, such as place-based learning, can be utilised to develop technical skills and related 21st-century skills such as creativity and innovation in TT teacher education.

Citing the Rural Schools and Community Trust, Bartholomaeus (2006:482) defines place-based learning as learning that is rooted in what is local - the unique history, environment, culture, economy, literature, and art of a particular place. The community provides the context for learning, student work focuses on community needs and interests,

and community members serve as resources and partners in every aspect of teaching and learning.

Using local resources during place-based learning provides a level playing field for all students to gain epistemological access (Maringe 2021). Focusing on the local setting in the learning and teaching of TT is a reform effort that attempts to achieve the United Nation's Sustainable Development Goal No 4, (Unicef 2021) in that the gap is narrowed between students who have the economic means to access learning resources typically scarce in TT, while those from disadvantaged communities do not (Zimmerman 2019). We argue that TT teacher educators need to cultivate and explicitly value the use of local resources to bring the concept of equity into reality as part of their students' preparation for educational practice.

The approach to teaching and learning in place-based learning differs from traditional approaches in that learning is not confined to the classroom because students interact with their social and natural environments and reflect on their actions (Zadra 2023). Many students studying TT are mature students with practical knowledge that could enhance the learning experience. Still, this knowledge has yet to surface in traditional, didactic teaching of the subject (Sebele, Wood & DuToit 2023). The current study was therefore aimed at determining how the learning and teaching of TT could be modified to engage student teachers in learning and teaching processes that connect theory with practice. Previously, in the teaching and learning of TT, teacher educators have unknowingly fostered passivity by focusing on a technical perspective (practice) in apparel production and excluding thoughtful engagement of the students with the process (Eaton 2023). The current study could enable TT teacher educators to understand that concentrating primarily on the technical perspective (artefact/apparel production) does not fully

address the goals of holistic and relevant education. The first author, a teacher of TT students, was interested in finding answers to the question: “How can I better stimulate holistic and relevant learning in TT? Researchers have attested that pedagogical approaches such as problem-based learning are key to stimulating growth (Radakovic 2023). In the current study, place-based learning is introduced as a pedagogical praxis to enhance essential skills required by student teachers in the 21st century, while also providing benefits for the community.

Motivating the adoption of place-based learning in teaching textile technology

Drawing on Smith’s (2002) principles in place-based learning, we argue that the TT curriculum has strong synergies with place-based learning methodologies and aims. Place-based learning augments, enriches, and broadens student teachers’ understanding of the subject and its delivery without necessarily overloading the curriculum (Sebele *et al.* 2023). Exploring Smith’s (2002) principles of place-based learning, it became evident that they correspond with the TT curriculum in the Zimbabwean context as it is intended to be implemented, as explained next.

The first principle, “Using local natural phenomena as the basis for curriculum development” (Smith 2002:588) would enable TT student teachers to witness the worth of using local resources and local places for teaching and learning in the subject. The Zimbabwean Ministry of Higher and Tertiary Education, Innovation, Science and Technology Education Development’s (MHTEISTED 2018) strategic plan for the period 2019-2023 applauds a heritage-based approach to learning whereby students use local resources to produce goods and services (Murwira 2018:10). This aligns well with place-based learning.

Another significant distinguishing feature of place-based learning, as argued by Smith (2002:593), is the “emphasis on learning experiences that allow students to be creators of knowledge rather than the consumers of knowledge created by others.” When implemented in TT teacher education, place-based learning enables students to develop their own guidelines on how to work through certain processes in the construction of textile products (Sebele *et al.* 2023). The method is not excessively prescriptive but gives students some freedom to be creative.

Additionally, place-based learning entails “real-world problem solving” (Smith 2002:589). We realised that adopting real-world problem-solving as part of place-based learning would “impart to students a sense of their own agency and collective capacity to alter their neighbourhoods or communities for the better” (Smith 2007:192). For example, with ever-changing fashion styles, the textile and apparel industry produce sizeable ecological and resource reduction problems in the textile product lifecycle. To act in response to this dilemma, TT student teachers could be encouraged to solve these real-world problems through the practice of sustainability in consumption. Although some measures, such as organically produced fibres, are generated to sustain the environment (Kemi & Zilahy 2024) there are still challenges in the textile industry which students could explore as learning opportunities and attempt to address in the community through place-based learning.

We also concur that place-based learning is bound up with the notion of “internships and entrepreneurial opportunities” (Smith 2002:590). Entrepreneurial education in Zimbabwe has been seen as fundamental but difficult to teach in a prescriptive manner (Anubhav, Dwivedi & Aashish 2024). Implementing place-based learning would enable TT students to develop entrepreneurial

opportunities in the field of textiles while contributing to social value (Du Toit & Kempen 2018).

The other all-inclusive approach to place-based learning entails “drawing students not only into the economic life of their community but also into its decision-making processes” (Smith 2002:591). When TT student teachers participate in community processes and work together to find solutions to issues related to textiles, they contribute not only to economic development but also to the well-being of the community. Civic engagement is a central tenet of place-based learning, and research has established that place-based learning projects lacking a civic action component have the greatest challenges in motivating students (Zimmerman *et al.* 2023). Thus, we contend that place-based learning and TT education are compatible, and each could be used to extend the other.

METHODOLOGY

As the practical aim of the study was to influence a change in the learning and teaching of TT student teachers, a transformative paradigm was adopted (Mertens 2022). Locating the current research within a transformative paradigm meant we were guided by a relational ontology and critical subjectivity as epistemology (Mertens 2022). Ontological assumptions in this study were that the primary investigator and the student teachers have different characteristics that could result in different realities and injustices. Hence, mindfulness of societal values and liberties became critical in shaping the reality that upholds social transformation and augmented social justice. Engaging in place-based learning, the primary investigator’s epistemological assumptions were that students would learn with and from each other through acting and sharing

different tasks with community members and would not solely depend on the teacher for information. Therefore, a clear understanding of culture, awareness of power relations, and a reciprocal relationship underpin the study.

Within the sphere of educational planning, quality initiatives are imposed on teachers rather than them looking closely and critically at student learning to advance their programs (Hutchings 2022). To transform teaching practices in TT, teacher educators need to reflect on their own teaching practices and their influence on the quality of TT education delivered at teacher education institutions. Therefore, the primary investigator adopted a self-study genre of action research (McNiff 2015:6) to improve her own practice and, ultimately, student learning. Consequently, she designed a 10-week course that required students to engage with community members in nearby institutions, including a gerontological nursing home, children’s homes and a hospital. All 27 students in her class participated in the place-based learning, and all gave written permission for her to use their reflections and discussions for research purposes.

Data was collected via students’ reflective assignments and the first author’s reflective diary, supplemented by a focus group interview (FGI) with eight students who volunteered to share their learning and experience of the course. An independent moderator conducted the semi-structured FGI to enhance the validity and reliability of the findings (William 2024). All three authors thematically analysed the data to find evidence of improved teaching practices leading to increased student learning, before coming together to reach a consensus. To further ensure validity, the emergent findings were presented in a conference presentation to academics who gave critical feedback to help refine the claims to knowledge (McNiff & Whitehead 2006:74). The Research Ethics

Committee at the university concerned (NWU-00869-19-A2) approved this study, attesting to its adherence to strict ethical considerations.

DISCUSSION OF FINDINGS

The themes generated from the data are presented with substantiating evidence and discussed in relation to the theoretical and conceptual frameworks that guided the study. To preserve anonymity, participants are identified by codes.

Theme 1: Student teachers developed technical ('making') skills for TT education

TT teacher education aims to equip students with skills in pattern designing, adaptation and construction of clothing and other textile-based household articles using a range of information communication technologies (ICTs) and any other forms of emerging technologies and software. The intention is to ensure that student teachers acquire the skills needed to promote sustainable, lifelong learning and development (Unicef 2021). In the past, a practice strategy or technical approach was employed, and students learned pattern drafting and clothing construction skills and techniques by watching step-by-step demonstrations and subsequently practising the skill on a piece of fabric before applying it to their actual project. Such systematic procedures stifled students' own inquiry and distorted what clothing construction is all about, consequently impeding student learning (Omwami, Lahti & Seitamaa-Hakkarainen 2020). Place-based learning required students to shift from a passive mode (watching and doing) to a design mode (exploration and inquiry). They were given a learning task that required solving extant problems about sustainable consumption of textiles in collaboration with identified community members. The process of exploration and inquiry utilised in the

current investigation facilitated self-directed learning. By the end of the limited period (ten weeks), students produced work that included evidence of a combination of several technical skills as:

- Pattern drafting
- Construction processes
- Fabric colouration – Dyeing
- Sustainability issues in textiles – textile repurposing
- Fashion design – design process, design brief and considerations

Place-based learning gave students many skills in ten weeks that they would have needed 24 weeks or more to master in a traditional didactic approach to teaching TT. Some of the work that students produced (Figure 1) provided evidence of manipulative skills that normally take longer to develop using a systematic demonstration method.

The first author observed that when students applied the new skills that they learnt in the making of their products, they appeared animated and excited to take part in this work, as compared to previous years where students only received instructional input that they followed without question, or indeed without much enthusiasm. The students described in their reflective journals a willingness to continue working on their projects for a much longer period than was the case in previous years:

“Working in [the community] has inspired and motivated me a lot ... I just wish this were not going to end anytime soon ...” (SPA)

Learning is a complex activity that involves the interchange of students' motivation, physical facilities, teaching resources, the teacher educators' teaching skills, and curriculum demands (Lyons 2022). Accessibility of equipment and proper laboratories in a nearby hospital sewing department enabled students



FIGURE 1: EXAMPLES OF SOFT FURNISHINGS PRODUCED FROM RECYCLED TEXTILES

to develop competencies in technical skills that they had initially dreaded, such as using an industrial sewing machine. One student noted in her reflective journal:

"We had all the equipment that we needed. At first, it was scary to use an industrial sewing machine, but eventually, I learnt to use it and could also teach my colleagues who had not yet mastered the skill." (RDS)

As students engaged in collaborative work, they also learned to support one another to ensure that they all mastered the learning outcomes. In FGI, one student mentioned how she was supported to learn how to knit by her team members:

"The strategy itself [place-based learning] is self-motivating and a good strategy to use for mastering skills. I was a bit slow and a bit strained. My team members did not give up on me until I

mastered the skill of knitting to their same level [sic]. This made me feel accepted." (NCH)

This student's trust in her team enabled her to reach the required skill level. An inclusive, democratic and respectful climate within the group encouraged everyone to participate and learn. One underlying principle in inclusive education that students need to consider as future teachers is to ensure that they provide an environment that supports all learners to develop at their own pace and to their individual potential (Makoelle 2022). The experience of these student teachers in doing place-based learning would, therefore, put them in good stead to make their future classrooms inclusive and learner-centred.

The place-based learning collaboration process also benefited students in gaining pattern drafting skills. Pattern drafting can be a complicated skill to teach since it requires a high degree of pedagogical content



FIGURE 2: A COMMUNITY MEMBER DEMONSTRATING A NEW TECHNIQUE TO DRAFT A PATTERN ONTO FABRIC

knowledge. Community members who taught students a simplified way to draft patterns directly onto the fabric (Figure 3), which students found to be much easier to master, took over this educational role to some extent, thereby expanding the student teachers' learning of this skill beyond what the lecturer would have taught them on her own.

The simplified version inspired students, as evidenced by what one student noted in her reflective journal:

"The old ladies can just draw a pattern on the material and cut without making a pattern, and this inspired me to cut the panda-shaped peg bag without first drafting it on a pattern." (MBW)



FIGURE 3: A STUDENT DEMONSTRATING A SKILL TO A COMMUNITY MEMBER

Students learned to draft patterns more quickly and appeared to have gained confidence in this quicker method even though some authorities are of the view that pattern drafting, as a skill related to creativity and critical thinking, requires development through specific guidelines to provide scaffolding for students' learning (Azman *et al.* 2022:722).

There was also evidence that students not only gained more technical skills through the place-based learning interaction with community members but that community members, in turn, also learned from the students, as one student remarked during the FGI:

"What I am happy about is that when I

was talking to [the community member], she said she did not have any knowledge of how to use an electric sewing machine, but she was happy 'cause peers helped her, [and] she was able to sew". (FGI, Participant 2)

"I learnt how to make doorstoppers [Figure 1] which I didn't know [how to make before], and I have more customers who want doorstoppers." (NMA)

Students could then share technical skills with community members (Figure 3) without. In other words, the students were already fulfilling the role of teacher, and place-based learning enabled them to experience an authentic teaching environment first-hand.

This practice by students aligns with the paradigm of learning in the 21st century that promotes application of knowledge and skills rather than only learning vicariously by watching the teacher demonstrate a technique (Brinkmann 2021). Next, I explain how students developed entrepreneurial skills.

Theme 2: Students developed entrepreneurial skills

The MHTEISTED remodelled the Zimbabwean curriculum to support the development of entrepreneurship and innovation, using locally available resources (Murwira 2018). The first author deliberately chose to investigate an alternative strategy to enhance TT student teachers' entrepreneurial skills, as she previously found difficult to teach these using prescriptive methods, as also noted by Chaker and Dellagi (2023). This finding reveals that place-based learning is an effective pedagogy for developing skills that TT student teachers could use to create income-generating or entrepreneurial projects. This is vital, as it addresses Du Toit and Gaotlhobogwe's (2017:27) recommendation that, in countries "where poverty and unemployment are persistent problems, the inclusion of entrepreneurship education in a subject that encourages product development would be advantageous." One student noted in her reflective journal:

This learning through entrepreneurial activity is thus relevant to the lives of the student teachers who are struggling financially to meet the cost of their own education and that of their children. As another benefit, learning *through* entrepreneurship (as opposed to learning *about* or *for* entrepreneurship) is viewed as the most effective approach to developing students' entrepreneurship skills (Du Toit & Kempen 2018). Next, we discuss the findings indicating how place-based learning changed students' mindset about using it as a strategy for their future teaching.

Theme 3: Students' increased openness to adopting place-based learning as a teaching strategy in future TT education practice

When place-based learning was first introduced, the first author observed that students doubted its value and exhibited signs of apprehensiveness. A student reflected in her journal:

"Why is it necessary to conduct place-based learning when information can be gathered from the internet?" (STS)

Discussions around place-based learning challenged students to think rather than unquestioningly engage in actions. This student openly voiced her thoughts, displaying an enquiring mind and critical thinking abilities by asking a pertinent question, which helped to analyse and synthesise the value of implementing place-based learning in TT education. A deeper level of engagement was required for attitudinal change to occur. Through experiential learning, students began to understand place-based learning and appreciate its value. Conversations gradually

changed as students noticed, acknowledged, and appreciated the how place-based learning was helping them to develop their knowledge and skills., as evidenced by remarks such as the one below:

"I never thought that we were going to achieve what we achieved. [I thought it] was [a] waste of time, but I realised [later that] it is something that is exciting to do." (FGP2)

Students required extensive experiences and a continuous supportive relationship to adapt to the place-based approach to learning. Intense shared experiential activities during place-based learning acted as triggers and provoked the meaning-making of new learning (), promoting personal transformation, a finding supported by existing research (Adda, Buntuang & Ardianto 2022; King, Mangan & Riveros 2022). Through sharing their experience of place-based learning with each other, they transformed their points of view, beliefs, and attitudes towards it When students were asked if they would consider place-based learning as a better strategy to adopt in TT teacher education, they were convinced that it was, as reflected in comments like:

"Place-based learning` is a better strategy to adopt because nowadays learning needs a hands-on teaching method in a different environment." (NCH)

"[expand] place-based learning as part of the curriculum: it should be implemented even in other subjects." (LMA)

This shows that students had gained a deep understanding of place-based learning. Critical reflection, induced via dialogue and reciprocal inquiry during the execution of the TT tasks, led to students becoming aware of

inconsistencies in their thoughts, feelings and actions and a realisation that their previous views on didactical approaches to teaching and learning TT did not seem adequate any longer. Experiencing a sense of disequilibrium induced by having to do something new, coupled with positive experiences of critical reflection and self-examination led to a general willingness to use it in their future teaching:

"You can't get enough knowledge by just sitting in one place. The internet, yes, has the information written by somebody else with his or her own understanding. So, if you interact with the community and research, you understand better." (SPS)

Understanding instructional strategies is critical for students pursuing a primary teacher education course, as this enhances learning experiences and makes learning more fun and practical (Sebele et al. 2023). Fostering transformative learning through critical reflection and dialoguing on the use of place-based learning in the teaching and learning of TT enabled students to make informed decisions on adopting the strategy in their future practice. It is anticipated that many, if not all, of these future TT teachers will adopt similar active, learner-centred, real-life teaching practices in their future careers.

CONCLUSION

We conclude that place-based learning as a teaching-learning approach contributed to TT student teachers learning how to design and manage the project and develop transversal skills such as critical thinking, problem-solving, communication and teamwork. Place-based learning contributed to holistic learning and development of the student teachers. The emergence of these pivotal skills during place-based learning makes it a novel but relevant

approach that could (or should) be applied in other technical-oriented subjects like food technology and design, family and consumer sciences and other Home Economics-related subjects. The early introduction of place-based learning as a teaching-learning strategy will offer more extended opportunities for teacher students to learn, reflect, and construct diverse skills in preparation for their future practice.

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REFERENCES

Adda, H.W., Buntuang, P.C.D. & Ardianto, H., 2022, 'Promoting transformative learning through independent-study campus (MBKM) in higher institutions during the COVID-19 pandemic', *Al-Ishlah: Jurnal Pendidikan* 14(3), 2701-2710.

Anubhav, K., Dwivedi, A.K. & Aashish, K., 2024, 'Entrepreneurship education in higher education (2002–2022): A technology-empowered systematic literature review', *The International Journal of Management Education* 22(3), 1009-93.

Azman, S.M.S., Arsat, M., Amin, N.F.M., Suhairom, N., Wahid, N.H.A., Khamis, N., Hanri, C. & Latif, A.A., 2022, 'Sustainable practices in pattern-making at local fashion institutions: A qualitative study', *KnE Social Sciences*, 719-729.

Balabuch, A. & Stahl, A.B., 2023, 'School learning enriched by doing: An apprenticing model', *African Archaeological Review*, 40(3),

469-479.

Bartholomaeus, P.A., 2006, 'Some rural examples of place-based education', *International Education Journal* 7(4), 480-489.

Brinkmann, M., 2021, 'Purposes of school—a phenomenological analysis via Hegel, Langeveld and Fink', *Journal of curriculum studies* 53(3), 255-269.

Chaker, H. & Dellagi, H., 2023, 'Combining teaching methods and developing students' entrepreneurial skills and entrepreneurial intention: The case of students in the faculty of Economics and Management of Tunis', *Industry and Higher Education* 37(4), 551-573, viewed 4 November 2023, from <https://doi.org/10.1177/09504222221146426>

Du Toit, A. & Gaotlhobogwe, M., 2017, 'Benchmarking the intended technology curricula of Botswana and South Africa: What can we learn?', *African Journal of Research in Mathematics, Science and Technology Education* 21(2), 148-158. <https://hdl.handle.net/10520/EJC-82357478a>.

Du Toit, A. & Kempen, E.L., 2018, 'Entrepreneurship education: Enhancing the value of Consumer Studies in South African secondary schools', in M.A. Mokoena & I.J. Oosthuizen, (eds.), *A scholarly compendium for teaching and learning*, pp. 185-212, Ivyline Academic Publishers, Potchefstroom.

Eaton, M.A., 2023. 'Are we there yet? Student and faculty mindset and retention: Exploring the connection through action research', PhD thesis, University of Georgia.

Garwe, E.C., Thondhlana, J. & McGrath, S., 2023, 'Higher education in Zimbabwe. The Bloomsbury Handbook of the Internationalization of Higher Education in the Global South, in Y. Aghid (eds), *Chronicles of African Philosophy of Higher Education*, pp.107-134, Brill, Buckinghamshire.

Hutchings, R., 2022, 'Navigating Culturally Responsive Pedagogy in a High-Stakes Testing Environment: Critically Aware Teachers Committed to Transformative Education in the Classroom', PhD thesis, University of Arizona.

Kemi, A.P. & Zilahy, G., 2024. Green fashion

- consumption – a review of the literature. *Periodica Polytechnica Social and Management Sciences* 32(2), 115-130. <https://pp.bme.hu/so/article/view/21052>.
- Kurnia, R.P., 2021, 'A case for Mezirow's transformative learning', *Diligentia: Journal of Theology and Christian Education* 3(1), 73-82.
- King, P.E., Mangan, S. & Riveros, R., 2022, 'Religion, spirituality, and youth thriving: Investigating the roles of the developing mind and meaning-making', in B.D. Edward, L.W. Everett & A.S. Sarah (eds.), *Handbook of Positive Psychology, Religion, and Spirituality*, pp. 263-277, Springer International Publishing, Cham.
- Lyons, N., 2022, 'Deep learning-based computer vision algorithms, immersive analytics and simulation software, and virtual reality modeling tools in digital twin-driven smart manufacturing', *Economics, Management, and Financial Markets* 17(2), 67-81, doi: 10.22381/emfm17220224.
- Mertens, D.M., 2022, 'Designing qualitative and mixed methods evaluations for transformative impact', in U. Flick (ed.) Sage, e-book, pp.1196-1214, Sage Publications, Los Angeles.
- McNiff, J., 2015, *Writing up your action research project*. Routledge, Oxfordshire.
- McNiff, J., & Whitehead, J., 2006, *All you need to know about action research*. Sage, London.
- Ministry of Higher and Tertiary Education Innovation Science and Technology Education (MHTEISTED), 2018, *Strategic Plan 2019-2023*, Ministry of Higher and Tertiary Education Innovation Science and Technology Education, Harare.
- Makoelle, T.M., 2022, 'Social justice in higher education: A quest for equity, inclusion and epistemic access', in A.P. Ndofirepi, F. Maringe, S.Vurayai, G. Erima (eds.), *Decolonising African University Knowledges, Volume 1*, pp. 39-51, Routledge, London.
- Murwira, A., 2018, 'Speech on universities', The Herald, viewed 10 October 2023 from <https://www.herald.co.zw/education-investment-a-priority-president/>.
- Omwami, A., Lahti, H. & Seitamaa-Hakkarainen, P., 2020, 'The variation of the idea development process in apparel design: a multiple case study', *International Journal of Fashion Design, Technology and Education* 13(3), 341-351.
- Radakovic, N., 2023, 'Transdisciplinarity and the curriculum: Reading UNESCO's "Reimagining Our Futures Together" with transdisciplinarity in mind', *Encounters in Theory and History of Education* 24, pp.195-209.
- Smith, G., 2002, 'Place-based education: Learning to be where we are', *Journal of Phi Delta Kappan* (83)8, 584–594, viewed 16 September 2023, from <https://doi.org/10.1177%2F003172170208300806>.
- Smith, G.A., 2007, 'Place-based education: Breaking through the constraining regularities of public school', *Environmental Education Research* 13(2), 189-207, viewed 3 September 2023, from <http://dx.doi.org/10.1080/13504620701285180>.
- Unicef, 2021. *The state of the global education crisis: a path to recovery: A joint UNESCO, UNICEF and WORLD BANK report*, Paris: UNESCO, cop. 2021
- Vygotsky, L.S., 1978, *Minds in society: The development of higher mental processes*. Cambridge, MA, Harvard University Press.
- William, F.K.A., 2024, 'Mastering validity and reliability in academic Research: Meaning and Significance', *International Journal of Research Publications* 144(1), 287-292.
- Zadra, C., 2023, 'At Home in the World, From School to Community: Potentials and Practices of Place-Based Education', in U. Nothdurfter, F Zadra, A. Nagy, C. Lintner (Eds.), *Promoting Social Innovation and Solidarity Through Transformative Processes of Thought and Action: A Lifetime for Social Change: Tribute to Susanne Elsen*, pp. 153-165, Bozen-Bolzano University Press, Bu-

press.

Zimmerman, H.T., Land, S.M., Faimon, L. & Chiu, Y.C., 2023, 'Mobile augmented reality supporting families' immersive collaborative learning: Learning-on-the-move for place-based geoscience sense-making', *International Journal of Computer-*

Supported Collaborative Learning 18(2), 291-322.

Zimmerman, S.D., 2019, 'Elite colleges and upward mobility to top jobs and top incomes', *American Economic Review* 109(1), 1-47. DOI: 10.1257/aer/20171019.
