



Pre-service teacher preparation model for cultivating posthumanist global citizenship in the urban context

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Abstract

The article aimed to develop pre-service teacher preparation model for cultivating posthumanist global citizenship. The research and development (R & D) methodology was employed. The objectives consisted of the following: (1) to study the context related to the challenge of teacher preparation to cultivate posthumanist global citizenship, (2) to develop a model for teacher preparation, (3) to implement the model for teacher preparation, and (4) to present policy recommendations for teacher preparation. Details about participants, research instruments and data analysis were extensively demonstrated in texts. The findings indicated that (1) culturally responsive teacher education is still unable to cultivate global citizenship responding to the contexts of socio-cultural and political conflicts, bioregional extinction, social suffering from the pandemic and ecological loss of diverse humans, more-than-humans and non-human species coexisting in the 21st century; (2) The model consisted of 8 components: vision and principles for preparing pre-service teachers, aims and desired competencies of pre-service teacher graduates, 4-year bachelor of education program, professional experience and school-based practicum, educational provision, testing and evaluation, professional development activities, and setting up the learning environment and context; (3) Pre-service teachers had higher posthumanist global citizenship competence after studying with the developed model than they did before studying, and they had overall awareness of ecological consciousness at a high level; (4) Teacher preparation approach should be shifting from human-centric recognizing human as superior learner that is central to mainstream citizenship towards posthuman citizenship by embracing principles, characteristics and learning process of posthumanist global citizenship education.

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Introduction

The current iteration of theoretical debates and practices regarding culturally responsive teacher preparation carried out to respond to various challenges and contexts of the 21st century is still unable to bring about education that can cultivate young people to have “global mindedness” character. In the third decade of the 21st century, teacher preparation that values global education and multicultural education should be reconceptualized in response to the global context which is full of environmental problems, ecological chaos resulting from drastic changes in the earth’s atmosphere, loss of human lives, extinction of non-human and more-than-human species, and the arrival of new epidemics (Lupinacci et al., 2019).

Critics argue that culturally responsive teacher education and various forms of community-oriented schooling such as place-based education, environmental education, social service learning, local history education and funds of knowledge that aim to build democratic and justice-oriented citizens and take into account democracy, equity and social justice are usually under-theorized, lack critical dimensions and fail to build interconnection between the global, regional, national, and local dialectics that are so crucial for recognizing the root causes and impacts of the entanglement of socio-cultural, economic, and environmental issues constructed by humans (Lewis & Kahn, 2010; McLaren & Houston, 2004). Moreover, the aforementioned approaches have been dominated by human-centric and human superiority ideology by merely categorizing all things as elements and complements to human society and the creation of humanity (Houser, 2009; Parker, 2002; Westheimer & Kahne, 2004). In reality, humans are not the center of the world. Human-centric narratives should not be the dominant substance and core of subjects being discussed about (Lupinacci et al., 2018).

By putting aforementioned debates into the global and international academic discourse, posthumanist approach has, for a certain period, had enormous influence on the academic discourse in social sciences and humanities such as sociology, anthropology, philosophy, literature and cultural studies. At the same time, global academic communities such as special interest section in critical curriculum issues and cultural studies and decolonial, postcolonial and anti-colonial studies in education under American Educational Research Association (AERA) constitute a number of scholars who have initiatives to create a space for this kind of discourse in curriculum, pedagogy and teacher education during the past decade (Bowers, 2002; Bayne & Ross 2013; Gruenewald, 2004; Lewis & Kahn, 2010).

However, posthumanist approach has not received much attention by teacher educators and educators in conceptualizing and practicing this approach for curriculum development, pedagogy and teacher preparation in our context since the field of teacher education, in general, has been relatively dominated by a technical-rational approach valuing human domination over nature-culture and non-human environments and conventionally isolates an emphasis on culturally responsive pedagogy, which can be conceptualized up to a more nuanced form of posthumanist pedagogy, to one course such as multicultural, global and socio-cultural foundations of education (Gist, 2017; Kopnina, 2020; Misiaszek, 2021). An exception, however, was found in the research titled *Teaching ecocriticism: Retelling stories through the eyes of animals* that employed posthumanist approach to question the privilege and human-centered superiority over other living things, animals and nature exploitation (Nualsiri, 2020). Ecocriticism as part of a broader theme of posthumanism is a framework for teaching English literature to pre-service teachers. The teaching approach was based on the main concept of animal representations, presented through human-centric perspective.

Posthumanist approach is an approach that will investigate the entanglement of all things in the circumstances as well as the assemblage of entities and beings in which the world and living things are on the verge of extinction, disrupted by advanced technology, turbulent conditions of the Earth’s atmosphere, unseasonal conditions of nature, new epidemics, and the capitalist system ruling the world (Fiona et al., 2020). This is a promising discourse that has been lacking in the curriculum, pedagogy and teacher education, which is a transformational period of learning in the digital era. It brings about a paradigm shift for preparing new teachers despite educational inequality due to digital technology. This approach will lead to a change in educational ideology, practices, and methodologies that are the foundation for cultivating posthumanist global citizenship and education for ecological democracy (Houser, 2009; Peters, 2017). In this vein, pre-service teacher preparation for cultivating global citizenship based on posthumanist approach becomes extremely essential.

The research gap was placed on strengthening posthumanist global citizenship competence and awareness of ecological consciousness to pre-service teachers in Chiang Mai province which is considered as urban context that is full of differences in class, gender, ethnicity, language, and identity politics (Nawarat et al., 2022). By doing so, the conception of citizenship will be transcending from multicultural to environmental and

ecological citizenship which is a concrete construction of posthumanist global citizenship (Misiaszek, 2021). In addition, the entanglement among diverse lives of humans, more-than-human, and non-human others, as well as the pressing issues regarding social gaps in equity, urban students' learning achievement, and environmental and ecological destruction impacting all life forms that co-exist in the urban context became a significant turning point for this research (Luke & Ismail, 2007; Pananil et al., 2023).

From the statement of such issues, the researcher, therefore, aimed to develop a pre-service teacher preparation model for cultivating posthumanist global citizenship in the urban context based on three reasons: *First*, posthumanist approach encourages us to reconstitute to what extent educational philosophy and educational approaches are based on the construction of human superiority (Fiona et al., 2020). *Second*, posthumanist approach ignites us to redefine the meaning of citizenship education that emphasizes that humans are at the center of citizenship, and that only human beings are viewed as citizens. It also aims to change the conception to posthuman citizenship, emphasizing as to how humans are bewildered by animals, inanimate machines and various forms of more-than-human and non-human subjects under the schooling and teacher preparation context. *Finally*, it is essential to construct foundation inquiry by combining the first two reasons, as it will allow us to begin inquiring innovative methodology in curriculum, pedagogy and teacher education based on posthumanist approach. That will evolve into promising approach to enhance the competency and quality of pre-service teachers through posthumanist conceptualization, and will lead to policy recommendations for teacher preparation reform that aims toward posthumanist global citizenship and ecological sustainability.

Objectives

The research objective was to develop a pre-service teacher preparation model for cultivating posthumanist global citizenship. Four specific objectives are listed below.

1. To study the context related to the challenge of teacher preparation to cultivate posthumanist global citizenship
2. To develop a model for teacher preparation to cultivate posthumanist global citizenship
3. To implement a model for teacher preparation to cultivate posthumanist global citizenship
4. To present policy recommendations for teacher preparation to cultivate posthumanist global citizenship

Methodology

This research employed research and development methodology (R & D). The research processes could be divided into 4 steps as follows:

Step 1: Studying the context related to the challenge of teacher preparation to cultivate posthumanist global citizenship, with an emphasis on strengthening posthumanist global citizenship competence and awareness of ecological consciousness for pre-service teachers in urban context.

The informants were teacher educators and in-service teachers who aimed to develop curricula and instructional approaches to create an awareness of ecological consciousness for pre-service teachers and secondary students in Chiang Mai Province, totaling 10 people. The variables studied include: (1) concepts related to teacher preparation for cultivating posthumanist global citizenship and the socio-cultural, economic, and environmental context in relation to posthumanist global citizenship competence and awareness of ecological consciousness; (2) the model for enhancing posthumanist global citizenship competence and awareness of ecological consciousness for pre-service teachers.

Researching at this stage involved the following steps:

1. Studying and analyzing documents, research and information about teacher preparation for cultivating posthumanist global citizenship in global and international contexts and the structural and institutional contexts regarding educational policy and administration as well as practical feasibility for creating awareness of ecological consciousness.

2. Collecting qualitative data in the studied area through focus group, with the collaboration of teacher educators and in-service teachers.

The tools used to collect data included a document analysis form to determine indicators of posthumanist global citizenship and a model for educational provision and for creating awareness of ecological consciousness. Such tools were constructed by the researcher and were verified for validity by 5 specialists with expertise in the broader field of posthumanist theory and relevant fields of multicultural/global education. The data were analyzed by using content analysis.

Step 2: Developing a model for teacher preparation for cultivating posthumanist global citizenship. The step aimed to create the model for educational provision and creating awareness of ecological consciousness for pre-service teachers.

Contents used in constructing a teacher preparation model were determined based on the scope of content conforming to learning outcomes required by Thai Qualifications Framework for Education (TQF) 2019. That is, TQF for Education has provided space for interpretation and integration of posthumanist approach into curriculum and pedagogy. In elucidating desirable characteristics of pre-service teacher graduates and in establishing the standards for learning outcomes, certain key terms were mentioned, such as the advancement of digital technology, the 21st century learning, new knowledge that is integrated and cross-cultural and diversity and learning in the digital world. In terms of curriculum issues, it was found that (1) teacher education institutions are legitimized with the autonomy to develop teacher preparation program that are culturally responsive to various identities of pre-service teachers regardless of gender, ethnicity, culture and environment as well as locally situated contexts; and (2) the creation of innovative and up-to-dates subject according to international standards is promoted consistent with educational rhetoric in the heterotopic digital space and education in more-than-human and non-human society.

As for the characteristics of desirable graduates, pre-service teachers are capable of organizing a variety of learning activities and media, integrating funds of knowledge, and cultivating community's cultural wealth that is appropriate for the subject matter and students with diverse backgrounds. They are able to integrate knowledge across disciplinary and across cultures while being active citizens who respect human rights, freedom, and democracy, upholding the conscience of being both Thai and global citizens. In the area of learning outcome standards, they should have knowledge and understanding in integrating knowledge with actual practices and integrating across disciplinary knowledge through Technological pedagogical content knowledge. They also gain knowledge and understanding of individuals, communities, societies, and bioregional interconnections due to identity politics of difference and are prepared for social transformation. The informants consisted of 10 teacher educators and in-service teachers who aimed to develop curricula and educational provision to cultivate awareness of ecological consciousness in pre-service teachers and secondary students in Chiang Mai Province.

At this stage, the research was carried out in 2 sub-phases as follows:

Phase 1: Drafting of the teacher preparation model with 8 components: (1) vision and principles for preparing pre-service teachers, (2) aims and desired competencies of pre-service teacher graduates, (3) 4-year bachelor

of education program, (4) professional experience and school-based practicum, (5) educational provision, (6) testing and evaluation, (7) professional development activities, and (8) setting up the learning environment and context.

Phase 2: Evaluating the drafting model by examining the appropriateness and suitability, by having a group discussion with those who are instrumental in teacher preparation according to the developed model. The process involved 2 sessions: (1) critical brainstorming with a focus on examining the appropriateness and feasibility of the model and teacher preparation manual. The meetings were held at the conference room of Faculty of Education of Lanna University, Doi Suthep University, and Rim Ping University respectively (all are fictitious names); (2) The appropriateness and feasibility of the model and teacher preparation manual was verified by 5 specialists with expertise in the broader field of posthumanist theory and relevant fields of multicultural/global education. To try out the validity of the model and relevant instruments, 3 teacher educators and 5 in-service teachers were asked to evaluate the drafted model and provide critical feedbacks for further revision. This process was conducted in many forms including in-depth interviews, analysis of texts and documents.

The tool used to collect data was a document analysis form to verify the appropriateness and feasibility of teacher preparation model, the manual, and learning measurement tools as follows: (1) a posthumanist global citizenship competency assessment form; (2) an awareness of ecological consciousness assessment form, both of which were verified for quality and validity by 5 specialists with expertise in the broader field of posthumanist theory and relevant fields of multicultural/global education. Content analysis was employed for data analysis.

Step 3: Implementing the teacher preparation model for cultivating posthumanist global citizenship. The objective was to experiment and study the results from pilot implementation of the model.

25 pre-service teachers from Lanna University, Doi Suthep University and Rim Ping University were selected respectively from a total number of 75 participants from the 3rd year pre-service teachers who enrolled in the school-based professional teaching course in the first semester of 2023 academic year and were practicing field observation and pedagogical conceptualization and were willing to participate in the pilot project. The variables studied include: the educational provision based on the teacher preparation model for cultivating posthumanist global citizenship as primary variable and posthumanist global citizenship competence and awareness of ecological consciousness as dependent variables.

This step proceeded as follows:

1. Organizing a meeting to provide knowledge and understanding for those involved in each teacher education institution. A workshop was organized to offer concepts and practices for teacher educators to bring the model into practices in both institutions. The researcher and co-researchers acted as mentors for each institution.

2. Carrying out educational provision with the sample groups, using the model for teacher preparation to pre-service teachers who were the target group as details aforementioned. During the process of organizing learning activities, the researcher and co-researchers went to the studied areas to observe, interview and record field data, through supervision and mentoring process.

3. Assessing the posthumanist global citizenship competence, which included the following aspects: knowledge, skills and processes of posthumanist global citizenship, and assess an awareness of ecological consciousness including the aspects of building ecological awareness, participation in the organization of ecological knowledge and bioregional diversity, conservation and restoration of ecological knowledge and bioregional diversity, and empowering ecological knowledge for sustainability and planetary citizenship. To achieve such purpose, the assessment form, which was verified for appropriateness and feasibility by 2 teacher educators, 2 posthumanist scholars and 1 curriculum specialist, was employed.

4. Organizing a meeting to extract lessons learned from the implementation of teacher preparation model for cultivating posthumanist global citizenship.

The instruments used to collect data include (1) a posthumanist global citizenship competence assessment form; and (2) an awareness of ecological consciousness assessment form created by the researcher and verified for validity by 5 experts aforementioned. Both of instruments were designated based on rating scales with 1,2,3,4 and 5 and the acceptable level was 3 in approaching quality standards. Data analysis involved the interpretation of means and standard deviations.

Step 4: Presenting the policy recommendations for teacher preparation model for cultivating posthumanist global citizenship for teacher education institutions and secondary schools that are responsible for teacher training and school-based professional experiences, which are under the education sandbox policy in Chiang Mai Province. The objective was to disseminate the model, purposively in 2 approaches: (1) integrating eco-critical pedagogy that is rooted in the concept of environmental education and eco-pedagogy; and (2) integrating multicultural/global education that shares

the same roots with the concept of global citizenship education. The informants included (2.1) educational administrators, academics and experts from agencies under the higher education institutions, Office of Basic Education Commission, and the Educational Service Area; (2.2) teacher educators from 3 institutions; and (2.3) 9 in-service teacher representatives from secondary schools.

The variable studied was practical feasibility, which was conducted through focus group discussions with educational administrators, academics, and experts, teacher educators, and teacher representatives from the participating schools. The aim was to summarize the teacher preparation model for teacher education institutions and secondary schools aforementioned. The tools used to collect data included: (1) a summary of lesson learned on the aspect of the implementation of teacher preparation model from teacher education institutions to participating schools or local communities with nuanced socio-cultural and historical contexts; (2) the teacher preparation model created by the researcher and verified for validity by 5 specialists. Content analysis was employed for data analysis.

Results and discussion

The findings and discussion would be presented in 4 aspects as follows: (1) the context related to the challenge of teacher preparation to cultivate posthumanist global citizenship; (2) a model for teacher preparation to cultivate posthumanist global citizenship; (3) the implementation of teacher preparation model to cultivate posthumanist global citizenship; and (4) policy recommendations for teacher preparation to cultivate posthumanist global citizenship.

1. Context related to the challenge of teacher preparation to cultivate posthumanist global citizenship

From a study of the actual practice of in-service teachers who focused on nourishing a sense of citizenship for students, and a study of the perspectives of teachers who have been teaching in Chiang Mai Province, the researcher found that teachers had tried to develop a curriculum and implement their community-oriented pedagogy in urban communities as a starting point in cultivating students to become environmentally and ecologically conscious and aware of the importance of the environment surrounding their schools and community. Analyzing these examples against the essence of posthumanist global citizenship aforementioned,

teachers have created a chance for posthumanist experience for their students in which the encounter with non-human and more-than-human others takes place in the pedagogical practices. Those teachers also expand the scope of teaching from culturally responsive pedagogy focusing on local-community-regional citizenship to global citizenship, as part of educational reform in practices (Houser, 2009; Misiaszek, 2016).

However, teacher preparation oriented to the culturally responsive approach is still unable to lead to education that cultivates global citizenship responding to the needs of the changing society, which is full of environmental problems, turbulent changes in the Earth's atmosphere, extinction of certain species, and the arrival of new epidemics that have occurred in the current period. Interestingly, research trends in teacher preparation and the crisis conditions resulting from the neoliberal-capitalist system that humans will be facing in the next half century, significantly indicate that the rejection to recognize, or the refusal to accept the diversity of interdependent co-existence in bioregional space, especially in modern schooling and education system, has led to social sufferings and has inseparably harbored the state of environmental degradation. This refusal to accept such reality is embedded in the concept of nature and environmental exploitation and oppression, including acts of violence, which is a conceptual framework that defines roles and responsibilities and authorizes the meaning of human superiority to educate others, which is the embedded philosophy of curriculum, pedagogy and teacher education (Lupinacci et al., 2019).

The above argument becomes the essence of posthumanist approach in the broadest sense. Posthumanism is a concept that challenges humanism or anthropocentrism, focusing on things that are considered inferior to human and questioning the establishment of human supremacy over nature, environment and other forms of diverse cultures. When linking the essential elements of posthumanist approach with educational studies, it can be said that the establishment of human supremacy, based on posthumanism and anthropocentrism, makes humans as subjects, by placing all things in schooling system to be relegated to being just objects. In this vein, the existence of all forms of lives, therefore, serves as instruments that are controlled and dominated by humans (McLaren & Houston, 2004).

In the dimension of citizenship education, the categorization of citizenship that has been embraced by progressive educators is justice-oriented citizenship. In that view, citizens must not only perform their duties according to their responsibilities, or participate in various political dimensions, but must be able to critically

analyze economic, political and socio-cultural structures, and be able to see various problems in our modern society rather than just looking at the surface level. Similarly, justice-oriented citizens have to be active inquirers and be able to identify relevant issues regarding injustice and inequality, as well as be able to recognize social movements and how to construct concrete systematic change. In other words, culturally responsive approach to teacher preparation for cultivating justice-oriented citizenship continues to focus on human-centric communities, with all things served only as elements and complements to the creation of civic inclusion and humanity. Teacher preparation for cultivating posthumanist global citizenship in the Thai context must, therefore, be open to alternative possibilities for those involved and the diverse communities to participate in setting the direction for curriculum, pedagogy and teacher education, to be consistent with the development of posthumanist global citizenship competence and awareness of ecological consciousness for pre-service teachers within the urban context.

2. The development of teacher preparation model to cultivate posthumanist global citizenship

The model was conceived due to the important concept of posthumanism, detailed as follows: (1) learning how to analyze and in-depth critique the root causes of human-centered ideology regarding socio-cultural, economic, political and environmental issues; (2) identifying various practices to support the building of nature-culture relationships between human, more-than-human, and non-human communities by extending care and support to all living things and all forms of life. This will be the revitalization of the commons for the public goods and moving beyond the capitalist-neoliberalism framework that commoditizes all common resources for trading and consumption (McLaren & Houston, 2004) and 3) developing knowledge, skills, processes, and ways of alternative thinking to create awareness that humans' way of being and living which neglects nature and the environment is destroying the bioregion and our planet.

The model was developed based on the structure of the 4-year bachelor of education program required by TQF and teaching professional standards prescribed by the Teachers' Council of Thailand. It provided space for determining learning outcomes that are consistent with the socio-cultural foundations of teaching profession, curriculum and educational administration. The model could be presented in 8 main elements as previously

demonstrated in the step 2 of research methodology. The model had finalized the process, emphasizing pre-service teachers' ecological learning and critical reflection processes for enhancing posthumanist global citizenship competence and awareness of ecological consciousness.

The model demonstrated appropriateness and feasibility, and could be implemented to create posthumanist global citizenship competence and awareness of ecological consciousness; the model consisted of 10 steps as follows: (1) organizing meetings to communicate the importance, goals, and directions for collaborative development for both teacher educators, in-service teachers, and pre-service teachers; (2) studying the issues regarding socio-cultural, historical, economic and environmental context and funds of knowledge in the community to deliberate what have been found together; (3) brainstorming to find out alternative solutions to the pressing issues and analyzing the context to brainstorm through problem-posing dialogue and to create active participation in problem-solving process; (4) developing the model, and examining the developed model from involved stakeholders; (5) establishing the understanding and recognition for teacher educators, in-service teachers, and pre-service teachers towards the developed model; (6) developing knowledge, skills and dispositions of pre-service teachers to analyze relevant issues related to posthumanist global citizenship, and measuring essential knowledge and understanding of pre-service teachers; (7) teacher educators organize their curriculum and instructional activities according to the model in partnership with the community in various forms of community-oriented teacher education, (8) the researcher and co-researchers follow up and monitor the actual performances of teacher educators, in-service teachers and pre-service teachers respectively, (9) measuring posthumanist global citizenship competence and awareness of ecological consciousness of pre-service teachers, and (10) organizing the activities for critical reflection and lessons learned, the details of which are shown in [Figure 1](#), the teacher preparation model to cultivate posthumanist global citizenship.

3. Results of the implementation of teacher preparation model to cultivate posthumanist global citizenship

1) The analysis showed the results of means and standard deviations of posthumanist global citizenship competence of pre-service teachers.

From [Table 1](#), it is found that pre-service teachers showed a higher level of posthumanist global citizenship competence after studying with the developed model than they did before studying.

2) The analysis showed the results of means and standard deviations of awareness of ecological consciousness of pre-service teachers.

From [Table 2](#), it is found that after pre-service teachers studied with the developed model, they showed overall awareness of ecological consciousness at a high level.

Based on the results, it is found that pre-service teachers had higher posthumanist global citizenship competence after studying with the developed model than they did before studying, and they had overall awareness of ecological consciousness at a high level. Such results were potentially influenced by the teacher preparation model, which is consistent with the qualification standards of the 4-year bachelor of education program, providing ample room for reconceptualizing posthumanist approach into the curriculum development process by focusing on eco-critical pedagogy and place-based learning (Lowenstein et al., 2010; Misiaszek, 2016).

Through pedagogical processes, pre-service teachers were cultivated to understand and personally recognize the main goals of cultural pluralism as a foundation of culturally responsive education and multicultural education as a stepping stone for understanding posthumanist theorizing in cultural diversity and teacher education by positively neglecting the configurations and the outcomes of prejudice, ethnocentrism, racism, sexism and other deficit-oriented perspectives. By doing so, pre-service teachers must develop a willingness to inquire deeply and reflect deliberatively their own sentiments, beliefs and dispositions regarding race, class, gender, ethnicity, and other complex intersectionalities of posthumanist education. The model further entails the determination of desirable characteristics and establishing standards for learning outcomes to strengthen posthumanist global citizenship competence and awareness of ecological consciousness for pre-service teachers in the urban context.

The pre-service teacher preparation model for cultivating posthumanist global citizenship in the urban context proposed by the researcher was one of the initiative efforts and might not be representative of other teacher preparation reforms. Nonetheless they pointed out the significance of theoretical and practical conceptualization within our educational system. It also indicated that a paradigm shift has been taking place in other countries, that the idealistic model of posthumanist citizenship education and nuanced forms of posthumanist theorizing is being enacted at teacher preparation level. Thus, teacher preparation is not a vacant space for neutral indoctrination of knowledge from teacher educators to pre-service teachers and students. Teacher education practices can potentially constitute as a site for grassroot transformation and empowerment.

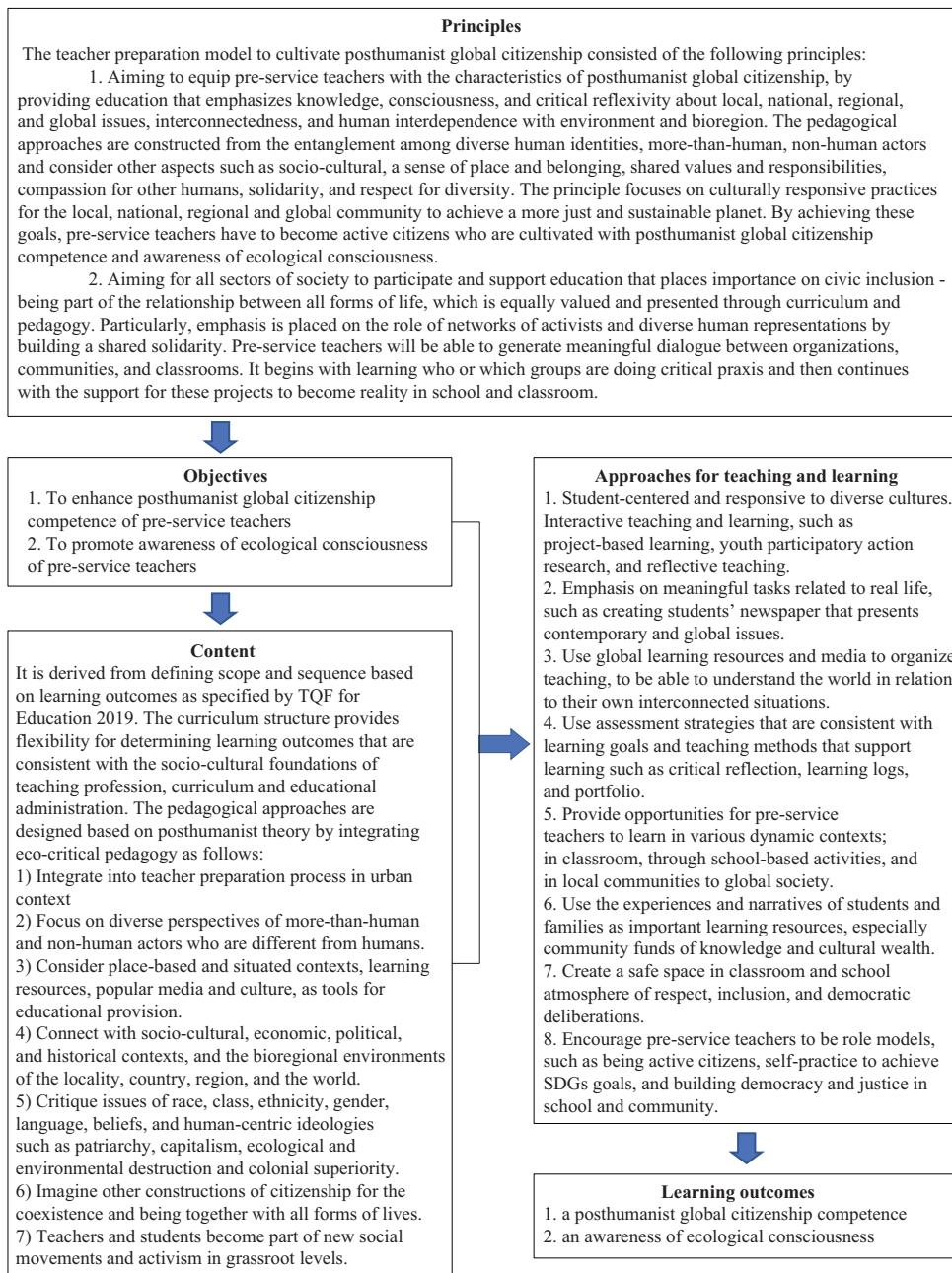


Figure 1 The teacher preparation model to cultivate posthumanist global citizenship

Table 1 The results of the mean analysis and standard deviations of posthumanist global citizenship competence of pre-service teachers

Teacher education institutions	Before studying		Competence level	After studying		Competence level
	\bar{x}	SD		\bar{x}	SD	
Lanna University (N = 25)	3.75	0.68	High	4.58	0.18	Highest
Doi Suthep University (N = 25)	2.79	0.57	Moderate	4.10	0.59	High
Rim Ping University (N = 25)	3.67	0.67	High	4.04	0.55	High

Table 2 The results of the mean analysis and standard deviations of awareness of ecological consciousness of pre-service teachers

Teacher education institutions	Before studying		Awareness level	After studying		Awareness level
	\bar{x}	SD		\bar{x}	SD	
Lanna University (N = 25)	2.37	0.38	Low	4.56	0.30	Highest
Doi Suthep University (N = 25)	2.84	0.75	Moderate	3.98	0.73	High
Rim Ping University (N = 25)	3.67	0.56	High	4.03	0.57	High

4. Policy recommendations for teacher preparation to cultivate posthumanist global citizenship

Initiating the practical implementation of the teacher preparation model for cultivating posthumanist global citizenship in teacher education institutions with similar contexts should start by creating awareness and providing knowledge in terms of concepts and practices to teacher educators and in-service teachers. The focus should be on changing the concept of teacher preparation from a human-centric perspective that the human learner is central to the definition of citizenship toward posthuman citizenship in which all forms of life could be subject of their own learning. To achieve that, there are principles, characteristics and learning process of posthumanist global citizenship education as follows:

Principles

(1) Posthuman experience takes place when humans from different socio-cultural, economic, political, historical and ecological backgrounds engage with different more-than-human and non-human actors and species who bring with them diverse values, ideals, dispositions and identities encounter; (2) Being “posthuman” relates to analysis and critical reflection about posthuman experience and acting upon that reflection; (3) Posthuman citizenship experience happens when diverse human, more-than-human and non-human groups and cultures engage in socio-cultural, political and ecological activities founded on environmental and ecological values and situated practices; (4) Posthuman citizenship education involves facilitating posthuman citizenship experience, and analysis and critical reflection on it and on the capability for further socio-political and ecological actions; constructing change at the individual level through knowledge, attitude and behavior; shift in perception and embedded ideals, change in relationship with other humans, more-than-humans and non-humans. The aforementioned shift is grounded in the particular but is relevant both locally and globally. Teacher educators and educators are required to work in solidarity with pre-service teachers and students to build new communities that will be socio-culturally, politically and environmentally healthy.

Characteristics

(1) A comparative juxtaposition in teaching and learning activities, such as juxtaposition of ecological aspects in the classroom, school, community and broader society and a critical perspective that challenges previous assumptions through the juxtaposition approach; (2) Focus on becoming self-conscious of dealing with others of diverse people, more-than-human and non-human species through a process of comparison and contrast and becoming mindful of the impacts of discourse, language and ideology on perceptions as well as becoming sensitive of their diverse complex identities; (3) Building a deliberative community that is trans-cultural/local/regional or consisting of diverse people, more-than-humans and non-humans from different backgrounds which are potentially in contestation rather than harmonious conformity; (4) Focus on becoming conscious of one’s existing identities, and opening alternatives for identity politics identities more than the national entity; (5) All of the aforementioned with critical reflective commitments to values by rejecting relativism while becoming conscious of values sometimes contested and variously interpreted; but being anchored as active citizen in local-national-global community to seeking a mode of co-production of knowledge and co-operation on the basis of shared goals, ideals and solidarities.

Learning process

The learning process can be organized to cover 3 dimensions: learning about/in/for eco-justice and sustainability, which are combined into integrated body of knowledge, in which all human learners are viewed as having entanglement with and being with other humans, more-than-human and non-human animals, inanimate machines, and various objects under social life in the ecosystem of schooling and education. Situated knowledge and various forms of community funds of knowledge that are normative in nature and depend on socio-cultural, political and ideological context of the local, national, regional and global aspect in which teacher education institutions are located should be recognized. That is the starting point where knowledge, skills and dispositions are diverted toward the cultivation of posthumanist global citizenship for pre-service teachers and to correspond to

the global context and contemporary educational goals rooted in the solidarity culture of our humans, more-than-human and non-human friends in this bioregional planet.

Conclusion

The teacher preparation model to cultivate posthumanist global citizenship was developed based on a posthumanist approach through eco-critical pedagogy, especially in enacting this approach in teacher education institutions. The research delved into constructing the model for teacher preparation, with teacher educators and in-service teachers responsible for developing curricula and educational provision to cultivate an ecological awareness and posthumanist global citizenship competence to students, while attempting to address the question of what forms of education for ecological sustainability is appropriate in the context of diverse communities. This research is therefore an example of a methodological approach in curriculum, pedagogy and teacher education, that aimed to critique the worldview in which humans are regarded as the center of citizenship and proposes that such a view has to be reconstituted through teacher preparation based on a posthumanist approach as a basis for working in solidarity and mutual efforts to cultivate global citizens emerging from the interrelationship of global, regional, national and local dimensions of the 21st century.

Conflict of Interest

The authors declare that there is no conflict of interest.

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