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Kalynne Gallagher
Western Washington University

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Stop, Collaborate, and Listen: The importance of critical and creative thinking

Kalynne Gallagher, Western Washington University

Abstract

Creative thinking and critical thinking are necessary skills for equipping individuals to be the social change makers, leaders and innovators we need to make the world a better place. However, with our current education system focused on standardized testing and conformity, how can we foster these skills and be empowered to challenge assumptions and take risks? Kay ties in her own experience as well as the work from scholars in the field of education like bell hooks, David Orr and Sir Ken Robinson, to support her beliefs. Throughout this piece Kay examines where she believes that her critical thinking and creative thinking come from, childhood and social groups. As an advocate for learning through different pedagogies and lived experiences, Kay believes that environmental education must be used as a place to foster and empower students to learn critical and creative thinking. She believes that in order to create resilient and inclusive communities we must employ both ways of problem solving. Throughout her capstone Kay encourages the audience to explore their creative and critical sides by engaging in a few activities and utilizing the playdough and drawing materials at their tables to synthesize information.

Keywords: creative, critical, thinking, inclusive, resilient, collaboration, community

Before I begin my presentation today, I'd like to take a moment to acknowledge this place and the peoples who have called both ends of the Skagit Valley home for thousands of years and continue to live and learn in reciprocity with the land today. I thank and honor the Coast Salish and Upper Skagit peoples including the Swinomish, Sauk Suiattle, Sauk, Nlaka'pamux, Nooksack, Lummi and many others that exist but may not be federally recognized. I recognize that I am a member of the colonizing people but offer my voice in allyship and recognition of the deep and rich Indigenous History of western Washington.

Human existence, because it came into being through asking questions, is at the root of change in the world. There is a radical element to existence, which is the radical act of asking questions... At root human existence involves surprise, questioning and risk. And because of all this, it involves actions and change - Paulo Freire (hooks, 2010, preface).

Questioning is not a means to an end, rather it is a lifelong process and crucial to the field of education. Creative and critical thinking are essential

to this process towards cultivating effective learning and productive living. These skills are integral to both the field of Environmental Education and daily lived experiences. Environmental Education should be seen as a stepping stone for fostering the skills necessary to produce the change makers, leaders, and innovators needed to make this world a more just and inclusive place. To work towards this shared goal, we must think and act both critically and innovatively, because together when we utilize these practices we can build more resilient, and inclusive communities.

Education that uses hands-on experience, imagination, and critical thinking is important, and acknowledges that every individual possesses unique capabilities, strengths, and skills. Some people like myself, learn best by being involved in the process. I find that I am most engaged when I learn through experience and am encouraged to ask a lot of questions. In the wise words of my favorite teacher, Ms. Frizzle “If you keep asking questions, you’ll keep getting answers.”

Where do we develop our critical and creative thinking skills?

The process of questioning begins when we are young; as little kids we ask about everything. We are innately curious about the world.

Children are organically predisposed to be critical thinkers. Across the boundaries of race, class, gender and circumstance, children come into the world of wonder and language consumer with a desire for knowledge. Sometimes they are so eager for knowledge that they become relentless interrogators - demanding to know the who, what, where, when, and why of life. Searching for answers they learn almost instinctively how to think (hooks, 2010, p. 8).

It is from these early experiences that we begin to learn how to evaluate our thinking, generate ideas, and learn how to put them into action.

These thinking skills can be attributed to our social groups: our families, friends, and various communities. As children we learn from watching others and at first seek to imitate our role models before drawing our own conclusions. It is through these interactions where we first develop learned behaviors around how to act, question our world, and interact with others. We learn how to improvise and problem solve by observing how others face challenges. I bring this up because I feel that I owe a lot of my creativity and critical thinking skills to the support and guidance of my family. I would like to take this moment to acknowledge my parents, Tom and Nancy, Aunts Patie and Carol, and Uncle George, who are in the audience today for always encouraging me to ask questions, be vocal about my beliefs, and be brave to challenge assumptions.

I remember watching my parents utilize their critical thinking skills to advocate for my sister’s needs, even when faced by opposition from the local school principal. My

sister, Emily was wheelchair bound and affected both mentally and physically by cerebral palsy. We went to different schools to accommodate her special needs. At her school she was fortunate to have supportive, caring teachers and aides that employed their creative thinking to provide lessons that used sensory activities to empower her to learn and explore with her peers. On our family trips, to the local museum, science center, or park, my parents creatively devised activities to engage us both to explore the world around us in our own capacities. As children, we were fortunate to have had such caring and compassionate parents that believed in encouraging questioning, curiosity, and risk taking.

It is because of my curious nature and early lived experiences that I believe creative and critical thinking to be key parts of my identity as an educator. As many of my peers can testify I am someone who likes to create things, to suggest ideas, brainstorm, and pose questions. Whether it is getting trapped by an avalanche with a group of 50 high schoolers or navigating a group of elementary schoolers through a rockslide, I am always the one bubbling with ideas and potential solutions. Problem-solving and brainstorming are integral components of who I am as an individual and are the practices which sustain me as a continual learner.

Acknowledging that everyone learns differently.

As some of you may have noticed there are crayons, markers, and playdough at each of your tables. As an educator I acknowledge that everyone has a different way of synthesizing information, and it is important to remember that learning can be messy. Some people need to fiddle, doodle, move around, or close their eyes and listen when they learn. Personally, I know that I am a fidgeter; I find it hard to sit still. I know that I learn best when I am keeping my hands busy or my body moving. And so, I invite you to fiddle with the playdough that is at each of your tables or doodle on the butcher paper in front of you. I will not be offended if your gaze wanders, and encourage you to have fun with it to embrace how you learn best. I have intentionally chosen playdough for the reasons that it is versatile and appeals to audiences of many ages. It is forgiving when we make mistakes, flexible, and playful - much like our how we generate ideas. I see it as reminder of childhood, a time when we are most curious. A time when we spend our days constantly exploring and questioning our surrounding environments, in pursuit of knowledge.

I believe that everyone is capable of being creative. While some people many deny this and say that they don't have a creative bone in their body, I whole heartedly disagree. For creativity is the basis for how we process information, make observations, generate ideas, and interpret the world around us.

“I notice, I wonder, it reminds me of” Activity:

Content/Time	Session Details
Introduce Prompts and materials (2 min)	How do engage in creative and critical thinking? Audience will engage in this practice by using natural items to explore.
Independent Observation/ Response (6 min)	Have audience respond to the following prompts by writing, drawing or sculpting playdough: I notice... I wonder... It reminds me of...
Pair & Share (10 minutes)	Now I would like you to find a person next to you and spend the next three minutes sharing with them your findings. Perhaps you have a story or observation that you’d like to share. Compare your items. <i>How are your two items the same or different? Do they work together? Did you partner make a connection to your item? (5 minutes)</i> <i>Last, have three groups share out about their items. Have each group identify their item to the rest of the group, respond to their initial observations, and what they learned from their partners. (5 minutes)</i>

I’d like to engage you all in a ‘Think-Pair-Share’ activity called “I notice, I wonder, It reminds me of”. This is one of my favorite activities. As instructors we have facilitated it many times with our groups of Mountain School students. For those of you sitting in the room that aren’t as familiar with the Mountain School program, it is where local students visit the Environmental Learning Center campus with their class to spend three days exploring the larger ecosystem through exploration, play, and collaborative learning.

At your table you will notice a pile of natural items, including: various lichens, pinecones, rocks, moss, leaves, and many more nature nuggets, some of which you may or may not have seen before. On the butcher paper lining the table in front of you, I invite you to respond to the following three prompts I have written here on the whiteboard. Feel free to use the playdough to sculpt, or the crayons and markers provided for drawing or writing whatever comes to mind.

Write prompts on the whiteboard...

“ What do you notice about your item?” I notice...

" What do you wonder about your item?" I wonder....

" What does your item remind you of?"... This reminds me of...

You'll notice that all of the groups came up with many different perspectives and connections. 'Think Pair Share' activities like this one foster both critical and creative thinking skills, because they allow us to analyze, evaluate, make connections, and encourage us to really take a closer look at what is front of us. We must remember that both creative and critical thinking are like muscles. We must exercise them regularly and nourish them daily if we want to develop and use them to their fullest potentials. Imagine how we could apply this approach to thinking to address the larger problems we face within our communities.

Redefining Problems

I believe it is important to clearly define what is meant by the word, 'problem', as most of us are likely to interpret 'a problem' to mean 'an unpleasant situation, a difficulty'. However, in terms of the field of education, a problem is better defined as a question raised for inquiry, consideration, or solution.

If we view problems in this light, this gives us a sense of resilience and hope. If problems are to be considered situations where you have the opportunity to make a difference, or to make things better, we then feel more empowered and equipped to take action. As cited in VanGundy's *101 Activities for Teaching Creativity and Problem Solving*,

There is only one way in which a person acquires a new idea: by the combination or association of two or more ideas they have already into a new juxtaposition in such a manner as to cover a relationship among them of which he was (say: they were) not previously aware. - Francis A. Cartier, (2005, p. 23)

Taking Action: L.A. Kitchen, a real-life example of thinking critically and creatively.

Whenever you are thinking both creatively and critically about ways to increase the quality of life, you become more actively involved in the problem-solving process. Take for example, Robert Egger, non-profit pioneer and president of the organization *L.A. Kitchen*. Launched in 2013, their mission reads:

L.A. Kitchen believes that neither food nor people should ever go to waste. By reclaiming healthy, local food that would otherwise be discarded, training men and women who are unemployed for jobs, and providing healthy meals to fellow citizens, L.A. Kitchen empowers, nourishes, and engages the community (L.A. Kitchen 2016).

L.A. Kitchen is Egger's second non-profit organization focused on issues of food waste and local community support. He is also the founder of a similar non-profit, *D.C. Central Kitchen*, launched in 1989 to address the issue of hunger, addiction, and homelessness around Washington D.C. These organizations were both born out of Egger identifying critical needs in the local community. Both organizations also operate their own for-profit subsidiary that hires the culinary training programs graduates and competes for food service contracts with surrounding businesses. Individuals like Robert Egger and organizations like *L.A. Kitchen* and *D.C. Central Kitchen* demonstrate how when we reframe our problems as opportunities we can improve the quality of life for our communities.

Redefining 'creative' and 'critical' thinking.

Up until this point I've been tossing around the words creative and critical a lot. Perhaps it would be helpful to clarify what my intention is when I use these words, as everyone may have a slightly different interpretation of these phrases.

What does it mean to think critically? According to Oxford Webster, critical thinking is defined as '*the objective analysis and evaluation of an issue in order to form a judgment; to analyze, break down, compare, categorize, list, sequence, and rank.*' In her book '*Teaching Critical Thinking*', author, feminist, and social activist, bell hooks defines critical thinking as "first discovering the who, what, when, where, and how of things and then utilizing that knowledge in a manner that enables you to determine what matters the most" (hooks, 2010, p.9). To think in this way involves examining all possibilities carefully, fairly, and constructively. It involves focusing your thoughts by organizing and thinking through possible outcomes, considering alternatives, and looking for proof.

What does it mean to think creatively? According to Oxford Webster, creative thinking is defined as '*the ability to transcend traditional ideas, rules, patterns, relationships, or the like, and to create meaningful new ideas, forms, methods, interpretations, etc.; originality, progressiveness, or imagination; to imagine, invent, change, design, and create.*' When I think of creative thinking I am reminded of thinking that inspires change. Often it leads to new insights, novel approaches, offers fresh perspectives, and whole new ways of understanding things. Some of the products of innovative thought include artistic things like music, poetry, dance, dramatic literature, and practical things like inventions, and technical innovations. However, there are some not so manifest examples as well, such as ways of putting a question that expand the horizons of possible solutions, or ways of formulating connections that challenge assumptions and lead us to see the world in imaginative and different ways.

How are critical and creative thinking related?

While the two may seem as polar opposites at times, they are quite complementary. The act of questioning and wondering are common to both ways of problem solving. Both creativity and critical thinking involve exposing new ideas and challenging assumptions to encourage others to look at things from a new perspective. These two ways of thinking must be used harmoniously to address dilemmas, concerns, opportunities, and challenges.

Through using both creative and critical thinking we increase our awareness and open our minds. We begin to **notice** the strengths in our communities, other perspectives or voices that needs to be heard, and recognize patterns. We begin to **wonder** what our resources might be, how to challenge problematic assumptions and beliefs, or how we can generate as many ideas as possible. We **wonder** what our futures might look like from the course of actions we decide to take. We are **reminded of** our previous experiences, of our own strengths, and of alternative approaches that may lead to opportunities for growth.

Critical thinking and creative thinking must be used together

While we should engage in these ways of thinking to collaborate and share knowledge, we must be wary of the shadowy side of collaborative thinking, as when left unchallenged this can lead to 'deficient thinking'. One must not be solely used without the other, if one is to engage in creative thinking, one must also be critical. Professor of Critical Thinking, Dr. Richard Paul warns us that,

Without critical thinking, collaborative learning is likely to become collaborative mis-learning. It is collective deficient thinking in which the deficient thinking being shared becomes validated. We learn prejudices, social hates and fears, stereotypes and narrowness of mind, all collaboratively. If we don't put disciplined critical thinking into the heart and soul of the collaboration, we get the mode of collaboration which is antithetical to education, knowledge, and insight (Paul 1992).

We must constantly be questioning and asking ourselves about the impacts of our actions. Critical thinking is a way to acknowledge privilege and recognize when to step up and step back. This past fall, along with many others, I attended the Northwest Conference for Teaching for Social Justice held in Seattle. Throughout the day we engaged in workshops to critically think about the narratives and educational materials used to teach students in public schools. Throughout the day we participated in workshops centered around the importance of language, voice, and student empowerment. We worked with social justice activists, teachers, colleagues, and researchers dedicated to radically transforming the current system of education.

Throughout each workshop there was heavy emphasis on developing skills for students and educators to think and act critically. Discussions around issues of race, class, gender, and systems of oppression in society encouraged us as educators to continually reflect on our own biases and privilege, and how they might materialize in our work.

In the words of well-known environmental educator, professor, and author, David Orr, "Knowledge carries with it [the] responsibility to see that it is used well in the world. For we cannot say that we know something until we understand the effects of this knowledge on real people and their communities" (1991). It is imperative that as educators we acknowledge students' lived experiences and cultures in order to foster inclusive and empowering learning environments.

Researching Creative and Critical Thinking

As a graduate student I have been looking into these rather complex topics for quite a while. I have poured over academic literature to support my belief of the need for creativity in not only our educational systems but in many aspects our world. I have talked with professors, family members, friends, and colleagues who employ both creative and critical thinking in their work.

However, skills like creative and critical thinking aren't something you learn from reading or watching presentations, rather they are something you learn from your own real-life experiences. Who are you as a learner? How do you learn best? What are the skills and strengths that you possess? When something challenges your beliefs and values how do you address it?

As I mentioned earlier, I learn best by asking lots of questions, trying out different ideas, and learning from mistakes. Creativity encourages us to consider all possibilities, including the ones that may fail, which is where I believe that we learn the most.

Perhaps the name that comes up the most, when one searches the words 'creative' and 'education', is Sir Ken Robinson. Sir Ken Robinson is somewhat of a Ted Talk celebrity, and with his scholarly title, captivating British accent, and wry sense of humor it's easy to see why. He is an internationally renowned scholar on creativity and education. Recently in his TedTalk, *Do schools kill creativity?* he says,

Kids will take a chance. If they don't know, they'll have a go. They're not frightened of being wrong. I don't mean to say that being wrong is the same thing as being creative. What we do know is, if you're not prepared to be wrong, you'll never come up with anything original (2006).

This point really stuck with me. If you're not prepared to be wrong, you'll never come up with anything original. He draws attention to the fact that by the time kids have grown into adults most have lost their creative capacity.

We have grown up in a society where we are frightened of being wrong. And we run companies like this. We stigmatize mistakes. And we're now running national education systems where mistakes are the worst thing you can make. And the result is that we are educating people out of their creative capacities (2006).

In America's current public education system there is less and less creativity. With the implementation of standardized testing, comparing students to each other by letter grades, and assigning projects with predetermined endpoints, students are less encouraged to take risks, make mistakes, or think for themselves.

By the time most students enter college classrooms they have come to dread thinking. Those students who do not dread thinking often come to classes assuming that thinking will not be necessary, that all they will need to do is consume information and regurgitate it at the appropriate moments. (hooks, 2010, p.8)

If we squander creative skills as students, how are we ever to produce adults that can think critically?

With the vision of what creative communities and schools look like, also comes the vision of creative individuals. Writer, entrepreneur, and presenter, Emilie Wapnick describes individuals who possess many interests and creative pursuits as 'multi-potentialites'. Self-identified as a 'multi-potentialite' Wapnick has spent a good portion her academic and professional life exploring the societal pressures that hinder creative and critical thinking. In her book, *How to be Everything: The Guide for those who still don't know what they want to be when they grow up* (2017), Wapnick explores the all too familiar question we've been asked throughout our lives,

"What do you want to be when you grow up?"

She talks about the pressure we feel from society when people ask us this dreaded question. And it starts early, most of us are first asked this question when we are around five years old. We respond with a multitude of responses, A pirate! A teacher! A ballerina! A doctor. We want to explore all of our options. This question continually gets asked of us again and again as we get older, like when we graduate high school, college, and even higher education. At some point, "What do you want to be when you grow up?" goes from being the cute exercise it once was to the thing that keeps some of us up at night.

While this question is well intended, to inspire us to dream about what we can be, it does not inspire us to dream about all that we could be. In fact, it does just the opposite, because when someone asks you what you want to be, it isn't as socially acceptable to reply with 20 different things. The notion of the narrowly focused or 'expert' life is highly romanticized in our western culture. It's this idea of destiny or the 'one true calling', that

we each have one great thing we are meant to do during our time on this earth and need to figure out what that thing is and devote our entire life to it.

But what if you're someone, like myself, that has numerous passions and interests? I have always been someone who wears many hats and has many passions. In the past ten years, the concept of "what I wanted to be when I grew up" has bounced around between ideas. How do you choose? Better yet, must we choose? Ultimately, by narrowing our life paths to choosing just one thing, we are limiting our capabilities. As dynamic human beings we must seek to find the places that encourage us to pursue our interests, and to think critically and creatively.

Environmental Education has been the place where I am able to combine my many interests, creativities, and passions. One such experience was while working with Nature's Classroom, an environmental education program based in New England. Here students were able to select their classes for the week and learn about a wide variety of interdisciplinary topics. Daily lessons, facilitated through exploration and outdoor play, were centered on building community and critical thinking. The approach to learning was deeply inspired by inquiry and collaborative group work. Instructors were encouraged to develop new lesson plans around any topics that inspired them. Instructors took complex subjects and taught them in innovative ways. Students learned about the forces and metrics of physics through playing ultimate Frisbee and making miniature catapults out of mousetraps and clothes pins. They explored digestive systems and diets of different animals by making replicas of scat from peanut butter, chocolate syrup, and oatmeal. Taxonomy was taught by using a dichotomous key to sort jelly beans into categorized groups and test their accuracy by tasting them. Was that jelly bean correctly identified as a root beer flavor or was it ear wax? Students were encouraged to take risks, be bold, and learn from their mistakes.

Throughout this graduate program, I have spent a decent amount of time reflecting on the path that has led me to pursue the field of environmental education. Ultimately, I believe it comes from my own lived experiences. I have reflected back on those that have engaged me to utilize my imagination and caused me to re-evaluate the way I think.

In order to become engaged global community members – we must to learn how to work best with different personality types, learning styles, work ethics, and worldviews. Both critical and creative thinking are skills developed through experiences that allows us to work together, to challenge ideas, to identify resources, to compromise, and to look at things from perspectives that differ from our own. We must use these skills as a way to communicate with others and to encourage us all to step back and see the bigger picture.

In another role as a naturalist at a local farm and nature park, I provided nature focused programs for the public and led field trips with local elementary schools. The park was a small gem of wooded trails, open fields, farmyard, and community nature center hidden amidst the hustle and bustle of the nearby city. When summer came, I was asked to stay on as a camp counselor. In this role I was given complete freedom to design my own weekly programs. I developed themes that included special crafts, games, and activities focused around team building, fun, and exploration of the park's grounds. I

absolutely loved my job. Each day was different and let my creativity flow. That summer I worked with a small number of campers with special needs. One of the campers, Flynn, loved sharks and pirates! Every day he would bring his little plastic shark to camp with him. Another little girl, Annabelle, loved to play tag and could always be found chasing instructors around insisting they play a game with her. Even though these children had mentors that spent their days exploring side by side with them, when it came time to choose afternoon activities, they were often shuttled off away from the group to do something else. This didn't sit well with me. Why weren't we looking for more activities to engage these students and give them more ownership over their own learning? I related empathetically to these children because of my own experiences. As I have mentioned earlier, having grown up with my sister Emily, who had cerebral palsy, her teachers and my parents were always looking for ways to engage her in group activities. Sensory activities, textures, and creative costumes were our go-to methods. Inspired by these experiences with my sister I created a plan to engage this groups of campers with the rest of camp. With the help of my peers, we designed activities and themes so that these students could be more included in group activities. Embracing my creative talents, I went out and bought materials to make shark hoodies for myself and another instructor for our 'shark week' theme at camp. I wanted to connect to our camper's passion for sharks and pirates into the week's activities. I also focused on developing more activities that involved using multiple senses, like making Ooblek, a gooey substance made from borax, cornstarch and water that is fun to squish and play with. I focused on activities where students worked together to build things. We constructed a soda bottle rocket launcher out of PVC pipes, a bike pump and recycled two-liter soda bottles, to teach the campers about the science and technology and also to see stuff explode into the sky! The whole camp would gather around in the afternoon taking turns sending the two-liter soda bottles, adorned with decorations, up into the sky and then scrambling to go find it in the field, ready to launch again. Throughout this summer, I was able to explore new ways of engaging campers and weave my passions into my work. Through these opportunities I encouraged myself and peers to think critically and creatively about how to foster an inclusive and empowering environment.

From these experiences I have found that Environmental Education is an approach that cultivates collaborative and critical thinking. The interdisciplinary nature, wide variety of approaches, varying curriculums, and the broad audiences that it caters to, opens up worlds of possibilities. As an educator there is ample room for flexibility and reflection. As a learner, it is a place to explore, be curious, and learn through hands on experience. The field of Environmental Education encourages instructors to bring their own passions and strengths. There are no set universal standards, instead there are common uniting themes that can be identified in numerous programs: making connections, fostering collaboration, encouraging questioning, learning through inquiry, and engaging in reflection. These practices are skills that must be fostered and carried forwards into our adult lives.

Throughout this program we've been posed the following question more times than I can recall, "What is education for?" (Orr 1991). I believe that education is for equipping learners to engage critically and creatively, and to learn how to work with and attempt

to solve problems with others. They help us answer some of our most personal questions, What are you called to? What are the causes you stand for? What are the problems you want to address? I believe that creative and critical thinking are how we find our purpose and place in the world.

I would like to take a moment before I conclude to thank those who have supported me in learning how to find my place in the world. I would like to thank those that have challenged me to think both critically and creatively. I am grateful for those who have inspired me to always ask questions, take risks, and explore endless possibilities. I would like to thank my parents for raising me and encouraging me to be an inquisitive and curious child, who has now grown into a just as inquisitive and curious adult. I would like to thank you all for being here today, for supporting all of us through our different journeys that have led us to this point, to pursue this complex and dynamic field. I would like to extend immense gratitude to all who have been my support system. My partner Ben, who moved across the country with me and has always been there to support my ambitious goals, crazy ideas, and emotional rollercoaster ride called graduate school. A big thank you to all of my friends who were always willing to listen, laugh, and learn with me. Thank you to all of the North Cascades Institute staff who have supported me along this journey in many different ways. Thank you to our professors and mentors, Joshua, Lindsey, Nick, Gene and Nini for your time, passion, and guidance to propel us onwards, engaging us in powerful conversations and aiding us in discovering the tools to make the world a better place. Thank you to the previous cohorts who have shared their insight and passions, including some of the Cohort 15 members who are sitting in the audience today. Thank you to Cohort 17 who has shown immense support and gratitude in the brief time we've spent together. And lastly to my cohort, cohort 16, you have challenged and supported me in so different many ways, to think critically, to speak my truth, and to take risks. You have had me laughing so hard at times that my sides hurt and have been a shoulder to lean on in times of need. For all of you, I am thankful.

I am thankful to have had their support and encouragement. I seek to pay it forward by empowering others to engage in their own journeys of creative and critical thinking. As an example of this, I leave you today with questions, because critical thinking and creative thinking are not a means to an end. As we all know the problems we solve today are always evolving and changing. With this posed challenge, how can we continue to use our creative and critical thinking to approach problems? Perhaps a better way of posing this question is, "What are the actions we can take to encourage creative and critical thinking in our daily lives?" Take a moment at your tables to think about this question and write your response on the colorful leaves at each of your groupings. When your table has written their responses please pass them to the end of your tables and place them in a pile.

Activity Two: Art activity to demonstrate a call for collective creative and critical thinking.

Content/ Time	Session Details
Brief Explanation	If critical and creative thinking are such an essential skill needed to make the world a more resilient and just place, how can we continue to foster them?
Art Activity 4 minutes	Have participants write down their response to, “What are some actions you can take to encourage creative and critical thinking in your daily life?”
Collect and attach to tree - 3 minutes	

I will now ask for assistance from my fellow grads to attach the leaves to this tree as an artistic representation of the importance of collaborative creative and critical thinking. When we use our critical and creative thinking collectively, we have a larger impact on the communities around us, analogous to how leaves have a much larger impact on their environment. Whether it is capturing sunlight (which symbolize providing resources and energy for growth), providing shade (providing a safe space for other organisms to grow and thrive, just as we must make environments more inclusive and just) or decomposing as organic materials into nutrients for growth, similar to how we must break down assumptions, bias and stereotypes to foster growth.

I believe that the field of Environmental Education is the place where we can foster creative and critical thinking. When I first was exposed to environmental education I mainly associated it with activities around plant identification, animal tracks, playing outside, and learning about the various cycles in nature. While those are pieces of many programs, environmental education includes so much more. Environmental Education is not limited to just teaching about the environment, nature and science; rather it is interdisciplinary, teaching about community, interconnectedness and instilling a passion for lifelong learning through questioning (Fraser et al, 2015, p.789). It is a unique and dynamic field that can provide learners the skills and tools they need to become informed, active citizens within their communities and find their place in the world. David Orr’s belief that all education is environmental education allows the practice to be transformed amidst many different settings both formal and informal, across a range of geographic locations and viewed from many different perspectives. (1991). It because of these reasons that I have been drawn to the path of being an environmental educator. I believe that we can create resilient, happy, and inclusive communities through critical and creative thinking, ultimately making the world a better place for us all.

The plain fact is that the planet does not need more successful people. But it does desperately need more peacemakers, healers, restorers, storytellers, and lovers of every kind. It needs people who live well in their places. It needs people of moral courage willing to join the fight to make the world habitable and humane. And these qualities have little to do with success as we have defined it. – David W. Orr, Ecological Literacy

Author Note

Kay Gallagher's journey in the field of environmental education began at the young age of eleven with her role as an animal care volunteer at the local Lutz Children's Museum in her hometown of Manchester, Connecticut. Between this experience and her family's summer trips to the cottage in Maine she developed a curiosity and passion for the natural world. Kay's path as an educator has been deeply rooted in connecting people with the natural world, whether it be their own urban backyards, a park, zoo, science center or even the remote wilderness of the North Cascades. She finds strength in taking on many different roles, and intentionally seeks out dynamic work environments that challenge herself and peers to grow, remain flexible, and to think critically and creatively.

References

- Fraser, J., Gupta, R., & Krasny, M.E. (2015) Practitioners' perspectives on the purpose of environmental education. *Environmental Education Research*, 21:5, 777-800.
- hooks, bell. (2010) *Teaching Critical Thinking: Practical Wisdom*. New York, NY: Taylor & Francis.
- L.A. Kitchen. (2016). Retrieved March 9, 2018, from L.A. Kitchen Website: <http://www.lakitchen.org/team/robert-egger/>
- Orr, David. (1991) What is Education for?: Six myths about the foundations of modern education and the six new principles to replace them. *The Learning Revolution (IC #27)*. Winter. Page 52.
- Paul, Richard (Interviewee) & Think Magazine (Interviewer). (1993). *Critical Thinking: Basic Questions and Answers*. [Interview transcript]. Retrieved from Foundation for Critical Thinking Website: <http://www.criticalthinking.org/pages/critical-thinking-basic-questions-amp-answers/409>.
- Robinson, Ken. (2011) *Out of Our Minds: Learning to be Creative*. Westford, MA: Courier Westford, Inc.
- Robinson, Ken. (2006) *How Schools are Killing Creativity, Ted Talk*, Accessed from: https://www.ted.com/talks/ken_robinson_says_schools_kill_creativity/discussion#t-77678
- VanGundy, Arthur B. 2005) *101 Activities for Teaching Creativity and Problem Solving*. San Francisco: John Wiley & Sons, Inc. Pg 23.
- Wapnick, Emily. (2017) *How to be Everything: A guide for those who still still don't know what they want to be when they grow up*. New York: HarperAudio