MEETINGS WITH REMARKABLE EDUCATORS

PODCAST TRANSCRIPTION OF

Gregory Cajete, Ph.D.

with host Ba Luvmour

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Ba Luvmour: Welcome to *Meetings With Remarkable Educators*. This

podcast is brought to you in part by you, our friends and supporters at *patreon.com/remarkableeducators*. Each podcast is a dialogue between me, Ba Luvmour, and an educator who sees the greatness in their students and touches the whole of their being. These educators defy generalizations. So here's a little bit about

what they've done and how I know them.

Ba Luvmour: Dr. Greg Cajete, this week's guest, is a pioneer in indigenous

education, and helping bridge the gap from indigenous education to science. He brings a profound holistic understand, and a wealth of experience to bridge these two worlds. Very importantly, to bring essential holistic understandings in the indigenous community to the rest of us, so that we can begin to really, profoundly understand

how to remind ourselves of our sense of place, and the

opportunities we have to learn from indigenous cultures. I am

thrilled, and have profound respect for Doctor Cajete.

Ba Luvmour: Welcome Doctor Cajete, and thank you so much for joining us today

on the podcast, *Meetings with Remarkable Educators*. We so appreciate all the work you've done, and we're just thrilled,

genuinely thrilled to have you on our podcast.

Dr. Greg Cajete: Well, thank you so much. It's also my pleasure to have this

opportunity to share my thoughts in regard to indigenous education, native science, all of the above in terms the kinds of things I've been doing over the years. So, again, thank you for

inviting me to be on your podcast.

Ba Luvmour: How many years have you been at it Greg?

Dr. Greg Cajete: Well, I started as a high school science teacher at the Institute of

American Indian Arts in Santa Fe [NM], which is a Bureau of Indian Affairs school. I started in 1970 ... actually it was student teaching, 1974. Then, later on that year I got an appointment at the school. So, doing the math, I would say 44, going into 45 years now.

Ba Luvmour: Oh my gosh. Well, thank you again, so much. It's so inspiring, and I

know I talk to many remarkable educators, and they know of you, and know of your work, and you've just inspired so many of us. So, I would like to jump right in to the notion of interconnectedness, and relationship, and relatability. Because, it seems like that's at the core, at the center of so much of what you bring forward. Is that a

fair way to say that?

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Dr. Greg Cajete:

Yeah, it actually is because, you know, early on with my first ... well, let me tell you a little bit of a story first in regard to my start as a teacher. I have two majors, undergraduate majors. Graduating from New Mexico, Highland University in Las Vegas, New Mexico. The majors were sociology and biology. So, I actually was trained as a field biologist, and really had intension to go onto masters ... you know, get a masters, and go into the field so to speak. But, I took a position, as I said, at the Institute of American Indian Arts, as the science teacher.

At that time they had a junior, and senior high school that acted as a feeder to the two year program that they had. It was kind of a middle school. The two year program, the junior and senior program was accredited by the state of New Mexico, and required a science credit to be passed. About a month into my teaching, the president of the school calls me into his office, and I thought I had done something wrong, so he was calling me back. Thinking okay, what does this guy want with me?

Ba Luvmour:

Really, the dreaded principal's office, yeah.

Dr. Greg Cajete:

Yeah. So, as it turns out, they had been impressed with my student teaching, and the president asked me, his name was Lloyd Mu^[sic] if I could create a curriculum for the students attending the institute that integrated science with art, with the cultural perspectives of the students attending the school. Again, this is a Bureau of Indian Affairs school. It has students from all over the United States...almost every tribe and every kind of configuration that you could imagine. One of the major issues they were having was that the students hated the way science was being taught. They would ask questions, why do we have to take science in an arts school? So, to address those protests of the students, he asked me very candidly, we've been having this issue. Students feel alienated from science, and the way that science is taught. They would say things like there is no science is Native tradition, and there's no science in art, and these misconceptions...

So, he wanted me to create a curriculum that integrated science with art, with cultural perspectives of the students. So, he gave me the resources, which in those days was just a God send. He gave me the resources and supported the research for me to actually create a curriculum from scratch. That started me on my journey, right there, and then. Which, now 44 years later, I'm still working on that assignment. But, now in new ways and new concepts. But, I did create a curriculum that lead to my doctoral dissertation. *Igniting the sparkle of indigenous scientific model*. That brought forward

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my focus on inter-relationship, and integrated studies, and integrating arts with science with cultural perspectives of Indian people, and indigenous education. In that process I began to see that there was an amazing connection, interrelationship between all of those disciplines and orientations in Native thought. But, you had to look at it from a kind of metaphoric perspective.

Dr. Greg Cajete:

That started me into looking at how do you actually create a system of education that works for native students? While at the same time, you're raising the foundations of art, and cultural perspectives, and basic principles in science. Weaving them together almost like weaving the rug, or making a basket. That allows students to really engage all of those disciplines, and really become very engaged in the lives. I created the curriculum, and of course students were just into it. They just simply said, this is what we've been looking for. This is what we want. So, we evolved the courses of study, and that lead to other courses, and so it was amazing. It was an amazing transformative, energetic process. Once I was able to sort of open the doors for students in that way.

Ba Luvmour:

I noticed that in reviewing your work again, that you bring forth the amazing scientific capacities that have been exhibited through native people, by native peoples throughout the years...the aqueducts from the South American indigenous people and others as well. Is that the kind of science that you integrated into the curriculum?

Dr. Greg Cajete:

Yeah, actually it is because, I realized very, very early on in this process of developing the curriculum that most of the students didn't really know Native history, or many times didn't know their own history's from their own tribal groups. So, one of the first thing I began to do is, is really bring in the cultural histories of indigenous people. Particularly how they're related to science...which, includes aqueducts, and traditional forms of gardening, and traditional forms of fishing, and hunting. You know, knowledge of the plants, and animal habits, and a sense of place, and astronomy. So, once I opened that box, and was able to select kinds of examples from cultural histories of Native peoples, the students began to really become very interested in what I call Native science. But, in the process we're also learning Western science, principles, ideas, and perspectives.

Dr. Greg Cajete:

So, that was the idea...to engage the students in a very holistic, and very creative way. I'm also an artist, a self-taught artist, so I was able to relate to students in terms of the artistic process, and

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looking at how art could be used to exemplify what the students were learning about in science.

Ba Luvmour:

Well, in the western science, almost every one of the paradigms, and the basic paradigm, there's an objectification of that which is studied, and particularly nature, and processes like that. It's as if it's outside to be operated upon, and objectified, and there's often textbook, and theoretical frameworks that are, in my opinion, kind of limit the investigation. It sounds that when you talk of the indigenous perspective and what you were bringing forward ... they wouldn't go to together. How would you marry those two?

Dr. Greg Cajete:

In a lot of ways there is a kind of conflict, and it's a conflict at the level of world view. Your Western science is very much a product of the Western world view. I would say it epitomizes it. You know, with its focused on objectification on the material world, either or logic on reproducibility, as opposed to Native epistemology, and ontology which, looks at relationship, relationship. You know? How are things interrelated, how do you see those patterns? How do you understand them? How do you celebrate them, and apply them? Because, Native science is a very applied science as well.

So, they were very practical kinds of ways in which Native people applied the knowledge of interdependence, and interrelationship to actual problems, and issues in science. So, what I did was basically, not try to marry the two but, rather to compare, and contrast, and in terms of looking at the Western science methodologies, appreciating those, and using those to apply to certain problems. I would say, environmental pollution of the stream in a tribal territory, and what science approach, taking a look at some solutions to mitigate that circumstance, that situation.

So, I tried to bridge the two world views, not so much to marry them but, to bridge them, and to begin to show that the Native perspective had a kind of integrity but, also Western science had its own integrity, and that if you could bring the two together, you would have a very powerful duo, and also process of working at problems, and issues in the world today. So, that's kind of the paradigm that is beginning to take hold. At least among Native people that begin to practice science, and focus on community issues—issues of need in their tribes, and their own regions.

Ba Luvmour:

This question is just my own personal interest, and it has so much to do with what I've been trying to explore in myself, and in my work, and in my relationships, and that is, and you touched upon it with questions ... with statements like epistemology, and ontology,

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and differing world views. I noticed that even when Western science comes to a place where they have to notice the interrelationships, have to include themselves, like in quantum mechanics, or even philosophically through existential inquiries, and so on. That it's still very, very hard for the Western people to give up that separation, and that objectification. It sounds to be like your offering is that there's a knowing, if you will, that arises from the interrelationship that allows this different kind of activity, and integration with science, and the world. Do I have that right? I mean, I struggle with these questions.

Dr. Greg Cajete:

Yes, and actually, you know, that was kind of a quintessential question I had to address in developing this curriculum with IAIA [Institute of American Indian Arts]. So, I searched high, and low for a kind of methodology that I could actually use. In the end I adapted a methodology for researching curriculum. That was developed by Robert Zais back in the 1970s. He was a curriculum theorist in education, and had written several books that dealt with the whole notion of how do you actually research a curriculum from its very beginnings of using epistemology, the social, cultural foundations, you know, the nature of the learner, and then theoretical orientations. You know, to begin to address, and create actually, curriculum. So, I adapted to his work, to the work I wanted to do with the curriculum at IAIA, in need of science.

Again, this is innovation, and creation, you know, that didn't really exist, a methodology for doing this. But, by looking at what was already there, and what other people had done, I was able to sort of, in a sense as an artist does, cobble together, create a new model of this, and that, and those kinds of materials that are available to you. Those kinds of ideas that are available. For me it was very much like creating an orchestration, as a musician or a conductor would do in creating a musical piece—pulling in different kinds of ideas, and perspectives. Seeing how they fit. So, it was like creating art. But, in this case I'm creating a curriculum.

So, it was a hit, and miss process in the first year or two but, because the Zais model is a research design model for curriculum I was able to adapt that, and in a sense come up with a model. Then based on that I began to teach in a variety of different kinds of ways. You know? Native science, and in the same process get students to understand basic science concepts, and principles. I think it worked wonderfully well. Matter of fact, you know the new buzz word in science education is STEAM, which, is the integration of arts, and humanities into the teaching, and learning of art. Of course, we

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were doing in that in 1970s at the IAIA, Institute of Indian Arts. So, it seems to just be beginning to gain steam, if you will.

Ba Luvmour: Yeah, okay.

Dr. Greg Cajete:

As we speak in science education circles. So, I guess I was ahead of my time in that sense but, I was looking at a practical issue with the students, and the need for a new kind of a model. Getting back to your original concern, and question about scientists. I've had the same experience with many scientists who have been very conditioned. I'm also a field biologist, so I know how that conditioning happens, if you're not aware of it, you become totally conditioned to the Western science view, and perspective of the natural world. The less you have some kind of reference, which I did, you basically buy it hook, line, and sinker, and it becomes your consciousness. It is very difficult to overcome conditioned consciousness. You know? But, I feel you can actually teach scientist if you begin to teach science in this way early on because, it not just using Native cultural perspectives. You can actually use any cultural system to compare to Western science, and begin to come up with the same kinds of results, and perspectives, that I did in working that model.

I left the institute after 21 years there, and I've been at the University of New Mexico. I recently stepped down as director of Native American studies after 18 years. But, I applied the same ideas and perspectives but, in this case, creating a Native American studies curriculum. As much as what I had done at the IAIA, again, I have to say it worked beautifully. Extremely well. Because, again in Native studies, you're studying Native perspective, Native understandings of the world, new issues. In Europe its against the mainstream Western thinking. You know? At every step that you go.

So, that's a strategy that has worked for me, and I think with my students, over these many years. I've written about it, but being a Native scholar, you tend to be in the margins but, in the forefront. But, I'm certainly well known in indigenous circles.

Ba Luvmour:

Well, I would do all I can to make you more well known in every circle because, this is really the heart is of what I understand, holistic education to be about. It's to allow, really, first, and foremost this stepping into the world view of interconnectedness. Without relationship-based education, well we see the results of that, and I'm sure that relationship must be at the heart of your curriculum. Is that correct?

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Dr. Greg Cajete:

Yes. It is. It's really ... understanding the world in a much broader, much more I think, realistic way. You know? In the sense of the complexities, and the whole that we are all a part of, and that we impact, and that impacts us. So, this trains the mind. I guess what I realized, I was working with Native students in those days, and still working with Native students, at the University of New Mexico but, what I realize also is that, this is a kind of reconditioning of the mind through a curriculum intervention that broadens perspective, broadens consciousness deliberately.

Ba Luvmour: That is beautifully said. That is just gorgeous, thank you.

Dr. Greg Cajete: Yeah, this is what we need in science today. We have to be able to

have scientist of the future have a much broader perspective, a much more comprehensive, holistic view, of what they do as scientists... if we're going to address the challenges before us, which

are immense.

Ba Luvmour: It's teaching story time.

Briefly, teaching stories invite us to see the world with a new perspective often featuring a wise fool or trickster animal they can be humorous with many shades of meaning shining through the story. I have told teaching stories for the past 40 years with great effect not only for the listener but for me as I have learned so much about myself through recounting these stories.

Today's teaching story is called, "**Once Bitten**".

Ba Luvmour: A man borrowed some money from the wise fool.

The wise fool thought he would never get it back but, gave the

money none the less.

Much to his surprise, the loan was promptly repaid.

The wise fool brooded. Sometime later, the man asked for the loan of a further sum, saying, "you know my credit's good. I've repaid

you in the past."

"Not this time, you scoundrel", roared the wise fool. You deceived me the last time when I thought that you would not return the money, you won't get away with it a second time.

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Ba Luvmour:

Let's have some fun interpreting this teaching story. Become a Patreon supporter at **patreon.com/remarkable educators**. And you'll have access to our detailed comments on how this story applies to education and parenting. Of course, that's just our perspective. The fun comes with community dialogue as the many shades of the teaching story come alive. See you there.

Ba Luvmour:

I have a question that I've struggled with again. I'm just ... I guess, taking advantage of this great opportunity to talk with you, and ... excuse me. I don't know if this is where we want to go. So, just bear with me while I try to ask this question.

I've worked ... many environmental educators have come because, of my work in holistic human development, and asked me about, well how can we bring environmental education more to the students that we deal with? And, in speaking with them, with the educators, I noticed that they had a sense of interconnectedness. That is, they knew that the environment works together. That everything's interrelated, that there's a ... you know, that the tree is not just a tree in some sort of objectified way but, an integral part of the world.

But, there's a different place that I feel lives in me, that I struggle to articulate. It's not just that I know that we're all downstream, and that sort of interrelatedness but, I don't know how else to say it except, I don't feel separate from tree, or ... I even have a hard time sometimes using the word if people understand it, as an object out there. Do you have a sense of what I'm trying to ask here? There's something about a different way of being, *as the whole*. Not just oh, I'm part of the whole but, *as the whole*?

Dr. Greg Cajete:

Yeah. I do have a sense of what you're saying, and I think that I've experienced that, and also in the process of developing my curriculum, or curriculums, that the essence of that, or seed of that question lays with our experiences with nature. With enhancing and nourishing our *biophilic* sensibility. You know, of what, and how we are connected, and to actually feel that, to embody that. So, here's where art, and of course, there's a lot of Eastern traditions of mindfulness. Native traditions are also mindful. In which, there's a kind of choreography of consciousness based on experience, based on engagement, based on relationship. That brings forward this consciousness, and sort of nourishes it and brings into fruition. I saw that extensively with my students as they began to deepen their understanding of Native science, and they were looking at science, and they were doing their art—whether it was writing, or poetry, or

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just creating stories. That they were beginning to embody, and ground this kind of intellectual aspect of academic training, or education. And, ground that in the personal experience they were having, and the encounters they had with the natural world.

They were beginning to articulate that, visually, in the form of story, in the ways I which they were describing what they were doing, in learning about an aspect of nature, or learning about animals, or plants, or astronomy. I guess, in answer to your question, I think teachers also need to be trained in a similar way that I've described for scientists. Teachers ... I'm also teacher educator, professor in the college of education. So, I see this time, and time again that, Western teaching is very intellectual. Of course there's an applied aspect to it but, it rarely gets to that emotive, or what we call, affective dimension of how you feel about what you're learning, and what you're doing. That grounding of the experiential consciousness in the work that you're doing.

I think you know, even for that, that we have to begin to take a look at how teachers are educated towards these same ends. Because, I'm committed, they are the people who have the greatest impact. All of this is a developmental process, it goes through ... starts with early childhood, and moves all the way through to when you're in your 70s, 80s, and 90s. It's a continual learning process. But, you set it up early; you certainly can set it up in the way in which you teach teachers how to teach more this kind of outcome.

Ba Luvmour:

I've run into ... I do teacher education as well. I've run into this same problem that you're just describing with some teachers, and with many, many scientists. I wanted to kind of branch over because, I know you speak of experiential education, and experiential learning, and you just described a little of it. I just wanted to describe to you for a moment, a process I did with some environmental educators, and students.

I took them out, and we sat in a clear cut. I just asked them to sit there for a few minutes, in silence. Then to either write, or draw whatever was coming up for them. Then we walked about a half a mile or a mile into an old growth forest. I did the same thing with them.

Then, I asked them to either read, or share their stories, or their art to one another. That's the kind of teaching that I feel is really effective. Is that in line with what you mean by experiential learning?

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Dr. Greg Cajete:

Yes. Yes, that's exactly it. You know, there's so many kinds of ways that you can get the students to embody what their learning about—through actual experience and through their engagement with that. Because, the real learning from my perspective, is ultimately affective. The object is ... which is, kind of the mantra of science is, from another perspective, can be said to be illusions. You know. It's how we relate to ... of course there's a material objective that can be objectified by the material universe. But, it's how we feel about what we're learning about, and when we're learning that creates the human meaning. That's the affected dimension. That's been in a sense, many ways, oppressed by our current approaches to education in the modern sense. Focus on assessments, and tests, and evaluations.

Ba Luvmour:

Is that what you mean by metaphor, when you say metaphor as a really important way of transmission. Are you saying then, that in a certain sense, just seeing things only for their physical or objective reality, isn't really seeing them in a whole way. So, metaphor allows us to branch out into a greater understanding?

Dr. Greg Cajete:

Yes. From my perspective, metaphor, and analogy form the basis of what I consider truly creative science because, it's ability, our human ability, our brains ability to metaphorize the world. I call it the *metaphor of the mind*. It's our oldest mind actually. It's the mind that developed early on in consciousness. It gives rise to stories, it gives rise to how is one thing related to another and how can I articulate that in a different way? It allows us to create bridges from what we know, to what we don't know, and sort of figure it out. So, the metaphor utilized extensively by Native peoples, particularly in their story forms or story traditions where you read or you hear a Native story at different stages in your life if you're growing up in the Native community. At each stage because, of your experience, and of your life experience, and maturity, you hear that story in a slightly different way, or in a new way, or you get some new insights based on where you happen to be in your life cycle.

So, the metaphor was extensively used to create a teaching that could be utilized, and could be interpreted at almost every stage of your life with new meanings and new insights. So, that's the metaphor. The metaphor is well known in literary circles. Certainly we look at movies like Star Wars, or Lord of the Rings, and what they're using is basically metaphors throughout. So, the metaphor lives but, sometimes not given the credit that it should be. Certainly lives in science as well. But, again I really use metaphor in a variety of different ways to describe, and to build those bridges between Native thought, and Western thought.

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Ba Luvmour:

Have you had any luck converting what we might call the traditional Western scientists to taking this much more broad, and holistic, and interconnected view? Is there any hope in allowing scientists to grow into what we're speaking of today?

Dr. Greg Cajete:

I have hope. First, I don't know that our current education system from K through 12 in its institutionalized, public sense is going to change very quickly. It probably will crumble, and crash, before it changes because, it's so vested. But, I have confidence in a lot of the young people today, who I've taught, and worked with; that they have a certain intuition, and sensibility, and if you give them the right tools to work with, and give them the encouragement, and mentorship, that they move forward into the world, and begin to make those changes, and those transformations.

It's not the institutions that do that, it's the individuals that have in many cases, like my students at IAIA originally had become alienated from that system—from that institution in that way of consciousness—and are looking for new ways of being human of the world. That process utilizes science as a way to create, and to explore, and to engage, and to address any of the issues in the natural world that we have created as a result of our civilization.

I do have confidence in individuals. Not so much in institutions. Working for an institution myself, I'm very aware of, and also as had been a former director and administrator, I'm very aware of the limitations. But, I'm also profoundly encouraged by many of the students that I've taught over the years. Will still have a creative flexibility and you just have to work with them a little bit to bring it forward. I've written many books. I've written seven books, and I'm going to write my eighth book. This is going to be an edited book with all my steams...

Ba Luvmour:

Oh fantastic.

Dr. Greg Cajete:

...who have created their own curriculums over the years that I've worked with them. I'm thinking that this is going to be a very powerful book because; a lot of these young educators have been off the radar. You know? They've been in the margins often. Working on this project, or that but, they've been making impact in ways that are amazing, I think, in terms of the people, and projects that they've been working in. So, that's what I want to sort of, emphasize. It kind of addresses your question in the sense that, it's really individuals that will make the difference. Those individuals connecting together ... I remember an experiment that I did early on in my work in biology where you get some muscle cells, and each

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muscle cell is already beating at a different rhythm, and different rate. But, just as they get closer and closer together, they begin to pick up each other's rhythm, and before you know it, they're beating, or pulsing in rhythm, and in tandem, and in time with each other.

That's what I'm seeing with many of the students. They're picking up the beat. They're moving it forward but, it's not the years, it's the teaching.

Ba Luvmour:

Sure, well, I mean on my side, we could talk for many more hours but, podcast time is kind of up for us. I'd like to ask if you would just have any last words, or maybe a comment on something I haven't covered that you wished we had covered, or just some words to our audience, to leave them with.

Dr. Greg Cajete:

Well, I'll just play off what I just said, in terms of the muscle cells. From my perspective, there's three quintessential questions initially that we face in education today. They all deal with relationship. First, how do we recreate a proper and more sustainable relationship with the natural world? Then, the other one that's connected to that is, how do we create a sustainable, and wholesome relationship with each other? Which is the multicultural issue. Then, the third one deals with our own consciousness—our spiritual consciousness. How do we, in a sense, create a consciousness that will move us forward into a very challenging future for human kind?

You've got to create the education systems, and processes that will allow us to at least have a way to address all those three kinds of challenges, those three kinds of issues. So, for me, my last book was called *Indigenous Community Rekindling the Teachings of the Seventh Fire*. In that I use a metaphor. Community is the medium, and the message. Many of the transitions that we face today in education, or in regard to the environment, or the social issues, or the political issues, which are all related are going to require a community. Not just individuals but, heart cells coming together, and beating as one is a form of community, and beginning to address these issues collectively in a way that allows us to sustain ourselves, and nourish ourselves into the future.

Dr. Greg Cajete:

So, I hope that as we say in my language. I'm from the Santa Clara Pueblo, Tewa Indian. We say, [spoken in Tewa language: woe yee knee sic], which means, "for life's sake"i. So, we do this for life's sake. For ourselves, and for the generations to come. So, thank you so

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much for this opportunity. I appreciate it greatly, and happy holidays.

Ba Luvmour: Well, same to you, and thank you so much for joining us.

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This is Ba Luvmour reminding you that, holistic relationships with children leads to joy and self-knowledge with the adults in their lives, with respect for you and for children everywhere. See you next time.

ⁱ The term "for life's sake we do this" implies that we do this for ourselves, for the perpetuation of our community, and also for the purpose of perpetuating life as a whole. It's that life concept, that understanding that life is a dynamic process that requires not only our learning about it and our attention to it, but also requires our participation in its perpetuation. This promotes wholeness in the individual, family, and community.