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**EXPLORING INTERGENERATIONAL LEARNING:  
UNDERSTANDING HOW YOUTH INFLUENCE  
ENVIRONMENTAL EDUCATORS**

A Thesis in

Recreation, Park, and Tourism Management

by

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## ABSTRACT

This research examined youth-to-educator intergenerational learning (YEIGL) during a residential environmental education (EE) camp for elementary students in Central Pennsylvania. The environmental educators consisted of university students with various levels of EE experience. Since YEIGL is an understudied area of IGL research, to understand YEIGL occurrence situated within the sociocultural theory framework, in-depth semi-structured interviews were conducted with the educators (n=27) after their teaching experiences. Through an inductive approach several learning themes emerged and were tied to existing literature. Findings indicate that YEIGL does occur in several ways for the direct benefit of the educators, as well as the indirect benefit of the campers. Therefore, YEIGL should be further investigated in IGL studies to better understand the power of IGL and how it can benefit the wider community.

*Keywords:* intergenerational learning, intergenerational influence, environmental education

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## Chapter 1

### Introduction

#### Problem Statement

There is a sense of urgency associated with today's environmental issues that require swift attention, including climate change (Damerell et al., 2013), biodiversity loss (Nunez et al., 2019; Gao et al., 2019), extreme weather events (Huber et al., 2011), and decreases in agricultural crop yield (Aydinalp & Cresser, 2008). As these issues continue to have an impact on increasingly visible issues in our lives, it is important to use scientific knowledge in everyday decision making (Mkhonto & Mnguni, 2021), in order to be properly prepared to deal with the social impacts from these environmental problems both today and in the future. As such, there is an apparent need for educators to share scientific knowledge in a way that is relevant to their students' life experiences (Mkhonto & Mnguni, 2021). Although learning about the environment in classrooms and on field trips can lead to pro-environmental behavior in students (Leeming et al., 1993), research on these topics indicate having a prolonged direct experience, as well as allowing students to have some autonomy in their learning experience can be the catalysts for pro-environmental behavior change (Duerden & Witt, 2010). As such, it is critical that information shared with youth is both relevant and interesting, as research shows that they will more likely retain knowledge learned and use that knowledge to change their behaviors (Ajaps & McLellan, 2015; Duvall & Zint, 2007; Mkhonto & Mnguni, 2021).

Although the need for relevancy in sharing scientific knowledge is recognized and addressed in some forms, such as modifying formal curriculum for rural communities (Avery, 2013; DeYoung, 1987; Mkhonto & Mnguni, 2021; Schafft, 2016; Sher, 2019), this is understudied for nonformal curriculum presented by environmental educators (Paraskeva-



Hadjichambi et al., 2020). Within environmental education (EE) there is a lean towards a monocultural colonial perspective of conservation that mainly promotes flora and fauna and their natural habitats (Tuck & Yang, 2012). A lack of discussion on the roles humans play in the environment - beyond the belief that limiting human interactions with nature would lessen negative anthropogenic impacts - may isolate communities with other perspectives. However, when environmental organizations learn about the conservation values and practices of the communities they serve, which they can do through intergenerational learning (IGL) from students to instructors, EE centers will be able to better modify content to connect to these communities. This will aid in bridging the gap between mainstream EE and the diverse communities they serve.

Youth-to-educator IGL (YEIGL) is understudied, as most IGL studies have focused on the impact of youth on their families or communities (Duvall & Zint, 2007). Although interviewing teachers has been included in studies to gain insight on youth-to-adult IGL (YAIGL) occurrence (Chineka & Yasukawa, 2020; Gambino et al., 2009), these studies did not specifically examine IGL occurrence from youth to the involved adult educators. Therefore, less is known about youth's impacts on the instructors educating youth, which is problematic as research shows that educators play an important role in facilitating IGL (Duvall & Zint, 2007). Studies have indicated teachers influence youth learning and IGL occurrence to youth's families through the teachers' dedication and enthusiasm for the topic of the program (Ballantyne et al., 2001; Istead & Shapiro, 2014; Legault & Pelletier, 2000). Other factors that have been found to influence the strength of IGL occurrence, including topic relevance and framing (Duvall & Zint, 2007), are factors that may be crafted or modified by the leading educator. To appropriately

apply these factors to an EE curriculum, educators should be responsive to youths' funds of knowledge and interest in the program, and adjust accordingly to better engage the students.

Additionally, many of the environmental issues of today require a current citizenry that is ready and engaged with these issues. To achieve this, the public should not only be environmentally literate (Lehtonen et al., 2019), but also provided with opportunities to connect with the environment (Ajaps & McLellan, 2015) and practice critical thinking skills (Lehtonen et al., 2019). Environmental educators should include these aspects into their curriculum to hopefully foster change. Also, educators' convictions towards addressing environmental issues impacts how they teach on these topics and therefore how engaged students will be on these topics (Ahmed et al., 2022). If the students are interested in the content, they will more likely share what they have learned with others, like their family members, exemplifying IGL (Istead & Shapiro, 2014). IGL is a potential double-edged sword that not only helps educate youth appropriately, but also teaches adults, preparing them to effectively deal with the environmental issues of today. Therefore, YAIGL experienced by educators involved in the youth-focused EE programs should be investigated.

### **Study Location**

As a hub for EE, Shaver's Creek Environmental Center (SCEC) offers an Outdoor School (ODS) for fifth-graders in Huntingdon and Mifflin counties of Pennsylvania. SCEC's ODS educators are Penn State undergraduate students who come to study at Penn State from all over the world. Since the ODS educators are from a more culturally, ethnically, and potentially socioeconomically diverse community, the instructors may have different knowledge and sharing approaches than those from the less diverse academic community of which the fifth graders of Huntingdon and Mifflin counties come, including assumptions related to socio-

economic status. For example, instructors may have environmental action ideals that are not necessarily affordable or relevant to the communities they serve. How the instructors adapt to share knowledge, the type of knowledge they share, and how that knowledge is valued with a different type of academic community may change based on their interactions.

The purpose of this exploratory study is to understand YEIGL experienced by college-age environmental educators at SCEC's ODS. At this stage in the research, YEIGL will be generally defined as the transfer of knowledge, attitudes, skills and/or behaviors, from youth to adults who hold an instructional role for the youth.

## **Literature Review**

### ***Defining Intergenerational Learning***

Intergenerational learning (IGL), is a type of learning that takes place between individuals from different generations. This type of learning involves the transfer of knowledge, attitudes, skills and behaviors, and this exchange can be bidirectional (Duvall & Zint, 2007). IGL can help create new ways of learning between generations, enhance the learning process, and help build relationships (Istead & Shapiro, 2014). It is important to note that multiple generations being together or doing something as a group does not always constitute IGL. It is instead the exchange of knowledge, attitudes, and values between members of two different generations (where the member of one generation is experiencing or has experienced an educational intervention, and the second member is or has not) that qualifies the engagement as IGL (Fischer, 2014).

Although IGL is typically thought to take place from older to younger generations, younger generations can contribute knowledge and impact perspectives and actions of older generations (Peterson et al., 2019). IGL from a younger generation to an older generation has

been referred to as “reverse intergenerational learning” or “reverse mentoring” (Baily, 2009). Adults willing to learn from and/or alongside youth has been shown to be successful in studies in various fields, including public health (Garcia et al., 2021; Lyu et al., 2020), sexuality (Morawska et al., 2014; Sifuentes, 2022), technology (Gamliel & Gabay, 2014; LoBuono et al., 2019), and environmental education (EE) (Gilleran Stephens et al. 2021; Vaughan et al., 2003). Across these fields, YAIGL occurrence was observed between family members as well as non-related individuals. Specifically in EE, YAIGL occurrence is often studied between youth and their guardians (Eldredge et al., 2023, *in preparation*). This may be because the youth-guardian relationship is already established before the intervention, allowing for a more readily exchange of information through previously built mutual trust (Lawson et al., 2018; Parth et al. 2020).

For the purposes of this paper, IGL will refer to younger generations transferring knowledge, attitudes, skills, or behaviors to older generations, acknowledging that definitions of “generational,” varies somewhat across the literature (Franz & Scheunpflug, 2016).

### ***Theoretical Background***

Intergenerational learning (IGL) is a sub-theory of Sociocultural Theory (SCT) of Development. SCT provides a lens on how relationships with others can develop one’s understanding of the world (McGlonn-Nelson, 2005). People can develop new knowledge, attitudes, and behaviors based on their interpretation of social interactions around them (Glăveanu, 2020). Since social interactions can occur anywhere, SCT is not restricted to formal settings (Edwards, 2007), but occurs in a variety of informal settings (Zimmerman & McClain, 2016). Hence, IGL can be achieved through social interactions in a variety of learning situations. SCT expounds upon how past knowledge, attitudes, and behaviors influence an individual’s learning development (Deans & Deans, 2018). Knowledge is not directly accepted; it is

perceived through each individual's viewpoint, which is dictated by their prior experiences and interactions, and the perceptions of what they expect of others (Gould et al., 2019). Based on knowledge held and actions taken by peers and teachers, social norms form and can be implied (Darling-Hammond et al., 2020). Therefore, these assumed social norms will influence an individual's actions, and these actions may change as the social norms change based on one's surroundings.

Thus, the sub-theory of IGL highlights how the role of prior knowledge, attitudes, and behavior of individuals within a social context will impact another individual's learning development. SCT also stresses how individuals can purposely encourage learning development in others (Armstrong, 2015). For example, someone in a social context with a desired knowledge or skill can guide others within that social context through social interactions until the desired knowledge or skill is achieved. To assess these learning outcomes, the Zone of Proximal Development (ZPD) can be used. ZPD can describe the level of an individual's knowledge, attitudes, or behaviors, and what one can achieve with assistance of others beyond what would have been achieved alone (Vygotsky, 1980). Although ZPD was created to focus on the learning development of children, it has implications for adult learners as well (Fani & Ghaemi, 2011). Therefore, ZPD has been implemented by teachers in their instruction strategy for both school-aged children and adult learners (Fani & Ghaemi, 2011). ZPD may also be used to help assess learning development between generations, like IGL.

In the past 30 years, IGL research shifted to focus on how younger generations can contribute knowledge, and impact perspectives and actions of older generations (Duvall & Zint, 2007; Peterson et al., 2019). To fully understand learning development processes, it is important to not only recognize who is interacting with whom, but also the directional transfer of

knowledge, attitudes, skills, and behaviors between generations. IGL can be considered a mutually beneficial relationship where knowledge shared from one generation to another can foster knowledge and attitudes to be shared in turn (Stephan, 2020).

### ***Intergenerational Learning's Role in Environmental Education***

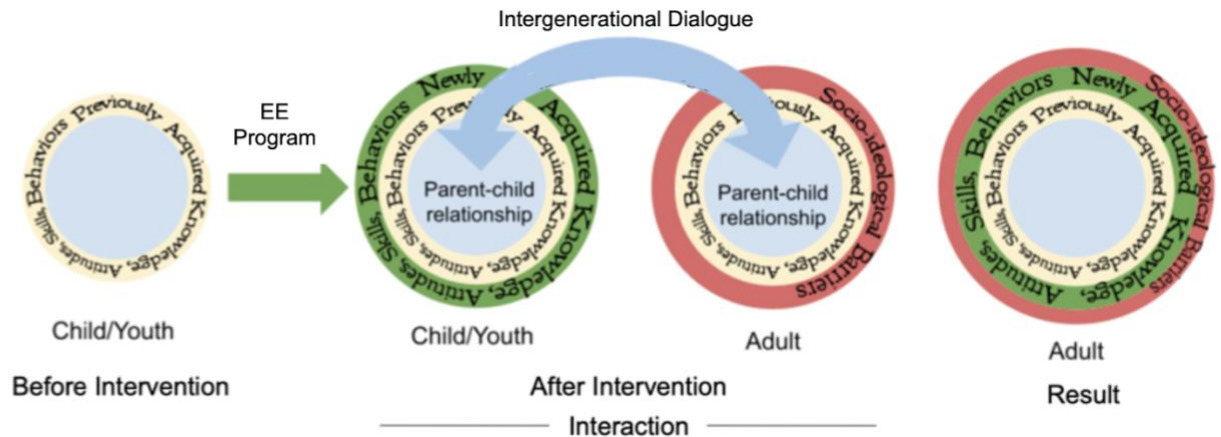
Environmental education (EE) emerged in the 1960s to preserve and manage the natural environment for the benefit of the world's communities (Stapp, 1969; Tbilisi, 1977). Since then, it has been used to help conserve our natural resources through promoting sustainable practices and developing sound decision-making regarding the use of natural resources (PLT, 2016). Research on EE has shown it to be an effective tool to both foster appreciation and deepen understanding of the natural environment and environmental issues (Ajaps & McLellan, 2015; Braun et al., 2017; Erhabora & Don, 2018).

Although EE may be effective for all ages, children are frequently the target audience for environmental programs, as attitudes towards the environment start to develop at a young age (Damerell et al., 2013). The importance of focusing on youth should not be understated, as fostering appreciation and deepening understanding of pro-environmental actions to address environmental issues, will help prepare younger generation to be leaders for change in the future. However, many of our environmental issues of today require swift action now, therefore, simultaneously targeting adults as well as children through IGL may be a promising way to make inroads on modern environmental issues such as climate change. There is a possibility that children can be effective as advocates for conservation through intergenerational dialogue with adults, overcoming socio-ideological biases to influence adults' understanding of environmental issues (Figure 1; Lawson et al., 2019; Peterson et al., 2019).

Within this subset of IGL, in the EE context, youth can act as catalysts for their parents to learn about EE by the parents' participation in what the youth are learning through an EE program (Parth et al., 2020). A study on IGL in the EE context, Spiteri (2020), discusses how sociocultural and bioecological perspectives allow for the influence between children and parents to be bidirectional. However, the youth to parent influence is understudied (Spiteri, 2020). Although it is difficult to prove a causal relationship between youth learning from an EE program to adults learning from youth (Damerell et al., 2013), empirical studies provide evidence that younger generations impact learning of older generations (Duvall & Zint, 2007; Gambino et al., 2009; Marchini & Macdonald, 2020). Understanding the factors that lead younger generations to catalyze older generations' learning related to EE, still needs to be investigated. Researchers should examine potential bidirectional IGL transfers where IGL has been documented from older to younger generations. Older generations may be receptive to younger generations' possible contributions of knowledge, attitudes, skills and behaviors.

**Figure 1.1**

*Intergenerational Learning Fostered by Parent-Child Relationship*



*Note.* A model depicting how the parent-child relationship can allow for the transfer of knowledge, attitudes, skills, and behaviors, through intergenerational learning in an

environmental education (EE) program between a child and their parent, overcoming socio-ideological barriers. Model inspired by Figure 1 in Parth et al. (2020).

### ***Emerging Thematic Factors of Youth-Focused EE Programs that Facilitate IGL***

Although SCT is a well-established theory, its subtheory, IGL, has limited research and gaps in the literature, and is therefore understudied. Believed to be the first of its kind, a systematic literature review highlighting IGL in the EE setting was conducted in 2007 by Duvall and Zint. At the time of their study, they only found seven relevant articles comprising of ten studies (Duvall & Zint, 2007). From the seven articles reviewed, they concluded the following factors facilitate IGL: (1) redefining children’s perceived status within the family towards acting as the “expert”; (2) schools acting as agents of social change at the community level; (3) parental involvement in student activities; community involvement in school programs; (4) hands-on and action-oriented activities; (5) time for in-depth discussion; (6) focus on local issues; and (7) enthusiastic teachers (Duvall & Zint, 2007). Duvall & Zint (2007) also recommend that future research should consider how to accurately evaluate IGL and how IGL EE programs can be further integrated into formal education curriculum. As educators have the ability to curate or modify curriculum content and/or its delivery, the involved educators should consider these thematic factors within their EE programs to better facilitate IGL occurrence. Specifically, (1) selecting a relevant topic and/or (2) framing the EE program to involve a focus on local issues for their target audience, as well as (3) children’s perceived status as an “expert.” The following sub-sections will expand on these three themes derived from Duvall & Zint’s 2007 literature review.

**Topic Relevance.** Programs with a focus on local issues can foster a sense of ownership for both children and adults (Duvall & Zint 2007), leading to increased engagement with and



application of program content (Ajaps & McLellan, 2015). For example, studies with a focus on local species of concern reported IGL occurrence between youth and their parents (Gambino et al., 2009; Marchini & MacDonald, 2020; Vaughan et al., 2003). After the program in Gambino et al.'s (2009) study, parents reported increases in discussions related to the Bilby, an endangered marsupial in Australia, and ways they may be able to help animals. As Duvall & Zint (2007) indicated, Ballantyne et al. (2001) Study 1 & 2 both highlight how through engagement with their local environment, students can see the impact of pollution in their local communities, therefore increasing their interest and involvement in applications of the programs. As a counter example, in a study by Chineka & Yasukawa (2020), when parents viewed the education program without applicability to everyday life, IGL occurrence was limited. These examples illustrate the importance of topic relevance in engaging both youth and adults in program content and application.

**Appropriate Program Framing.** Although some researchers found that IGL can occur in some contexts, socioeconomic, cultural/religious, historical, and political barriers may affect parents' openness to knowledge transfer from their children. Even if knowledge is transferred, the ability to change behavior may be connected to economic conditions and perspectives of the family units that are influenced by cultural traditions. For example, Lloro-Bidart & Sidwell (2020) presented evidence of bidirectional learning related to cultural knowledge. Although families gained new knowledge and concern for sustainable food practices, adapting to sustainable practices may not be economically possible, as in the context of family businesses selling humanely produced meat. Chineka & Yasukawa (2020) discussed how although youth were able to apply climate literacy knowledge, since many of their parents favored their own experiential knowledge related to historical evidence or religious beliefs, these parents were

skeptical of the new concepts and did not adjust their unsustainable practices. Parth et al. (2020) also found IGL on climate literacy to be limited by cultural/political barriers. Although the study was able to report positive knowledge transfer from youth to their parents, many of the parents' attitudes and actions remained unchanged. Applying appropriate framing on EE programs for their specific audience may allow socioeconomic, cultural/religious, historical, and political barriers to be overcome to allow relevant EE content to be shared from youth to adults and applied appropriately.

Two studies with mixed IGL occurrence and one study with unsuccessful IGL occurrence included content on climate change (Chineka & Yasukawa, 2020; Parth et al., 2020; Spiteri, 2020). As Parth et al. (2020) discussed, climate change as an EE topic may be a difficult topic for youth to adult IGL occurrence as parents' receptiveness to climate change information presented to them by their children may be influenced by socio-ideological views. This study highlights the importance of appropriate framing plays in making the topic relevant and meaningful to its target audience. Chineka & Yasukawa (2020) also emphasizes the importance of framing and how cultural, historical, and political views may have inhibited youths' influence on parents' behaviors. Therefore, when designing and/or delivering the curriculum, it is important to consider what lens the EE curriculum should be presented to better foster IGL occurrence. Educators can gain an understanding of appropriate framing and topic relevance through engagement/IGL with the program participants.

**Youth's Perceived Standing.** Adults are often perceived to be those who have more wisdom and knowledge than youth and children. Since learning is often perceived as being unidirectional from adult to youth, adults are less likely to perceive youth as knowledgeable enough on a topic to contribute meaningfully to the dialogue (Duvall & Zint, 2007). In Spiteri

(2020), students were not always successful in changing parent behavior. Spiteri (2020) cites some parents who were not impacted stated they perceived children as too young to understand environmental issues. In cases where parents responded positively to youth's influence, they reported an improved relationship with their child. Due to a small sample size, Spiteri (2020) cautions against generalizations from this study. However, Williams et al. (2017) also discussed how youths' standing in their family relationships could predict IGL success. A thematic analysis of the parental interviews suggests that the lack of indication of child empowerment was a factor in whether the disaster resiliency program resulted in the family improving their household disaster preparedness. Therefore, adults' perception of youths' standing influences the success or failure of youth to adult IGL. This could apply to educators as well. For educators to learn from youth to better understand their audience to modify curriculum with appropriate framing and topic relevance, educators should value youth's funds of knowledge.

### *The Value of Investigating Youth-to-Educator IGL*

When IGL is incorporated into youth-focused EE, it is expected that youth participants will share what they have learned from the program with their families and others, often labeled the "wider community" (Ballantyne et al., 2001 Study 1 & 2; Mitchell et al., 2015; Peterat & Mayersmith, 2006). Although insight on IGL occurrence from youth to adult was gained across a handful of studies through interviews with youth's teachers (Chineka & Yasukawa, 2020; Gambino et al., 2009) and administrative staff (Schneller, 2008), none of these articles examined IGL from youth to these educators, specifically. However, possible benefits to the wider community, which included youth's educators, were discussed in two articles (Ballantyne et al., 2001; Peterat & Mayersmith, 2006).

Although studies have indicated teacher influence on youth learning and sharing with families, youth's impact on educators involved in the EE programs should be investigated. As Duvall & Zint (2007) highlights topic relevance and framing are important factors influencing YAIGL occurrence. Also as discussed by Duvall & Zint (2007), Ballantyne et al. (2001) Study 1 found that educators' dedication and enthusiasm for the program generated student enthusiasm for the topic being studied. Istead & Shapiro (2014) also presented evidence that teachers play an important role in the development of the child's ability and willingness to share knowledge in the home. If educators are invested in the program, youth may be more receptive to program content and its value, which may lead to greater sharing from youth to their parents at home.

### **This Thesis' Contribution to IGL Literature**

This research will contribute to the theoretical discussions on YAIGL, specifically YEIGL as it is believed to be first of its kind to study the impacts of the youth-educator relationship. We intended to understand how youth influence their educators, with the goal of helping practitioners to foster IGL to better understand their audience and modify curriculum to be as relevant as possible to their audience. However, as little has been studied in this area, an inductive approach was used to allow the emic views of the experience of YEIGL to emerge and guide the research. This thesis was written up in the form of an article-style thesis with the intent of submission of the final article to either *Journal of Environmental Education* or *Environmental Education Research*.

## **Chapter 2**

### **Examining Youth-To-Educator Intergenerational Learning in Environmental Education**

#### **Introduction**

The urgency to address global environmental issues, such as climate change, severe weather, biodiversity loss, and decline in agricultural yield, cannot be ignored. These issues not only threaten our communities (McDonald-Harker et al., 2020), but also the biodiversity (Habibullah et al., 2021) of our natural world. This can be incredibly problematic as loss of biodiversity negatively impacts ecosystem services; services from which we rely on for such necessities as our health, food, and fuel (Díaz et al., 2006). For example, climate change has changed crop phenology and decreased pollinators which has resulted in the reduction of agricultural yields (Marshman et al., 2019; Thornton et al., 2014). Not only is there a reduction of agricultural yields, but there is also an ever-growing demand for food with the increasing world population (Timsina, 2018). To combat these issues, strategies, such as investments being made in renewable energies, increasing and maintaining forested lands, and city and transportation planning to reduce carbon emissions (Creutzig et al., 2016), have been enacted globally. Although new practices and technologies are becoming available to combat these issues, there is a lack of adequate action at the individual level (Sapiains et al., 2015). Effective change requires community level buy-in and action (Mabon & Shih, 2017; Teig et al., 2009), but unfortunately, factors such as socioeconomic, political, and demographic settings stymie people on how to address environmental issues (Koubi, 2019).

Fortunately, environmental education (EE) initiatives have been making progress in persuading people towards buy-in and pro-environmental behavior (PEB) changes (Hungerford & Volk, 1990), such as purchasing environment-friendly products, reducing water and energy

usage, and minimizing waste through means such as recycling (Kurisu, 2015). Research shows that individuals who feel a sense of connectedness to nature are more likely to develop PEBs (Diessner et al., 2018). This is exciting as EE can be used as a tool to foster this necessary connectedness to nature (Ernst & Theimer, 2011; Otto & Pensini, 2017). Additionally, research of EE also demonstrates that programming can simultaneously lead to increased PEBs while also increasing the necessary environmental knowledge needed to help inform decision-making, (Ajaps & McLellan, 2015). Although these impacts are certainly promising, addressing environmental issues is a complex process (Rosenbaum, 2019) and socio-ideological biases over scientific knowledge can still drive and therefore divide perceptions of politicized environmental issues (Stevenson et al., 2014). Fortunately for youth, research shows that scientific knowledge can overcome socio-ideological biases (Lawson et al., 2019; Stevenson et al., 2014). Therefore, EE targeted at youth could help prepare the younger generation to be leaders for change in the future. However, as our environmental issues continue to cause undeniable impacts that must be dealt with today, there is a need creative educational strategies that can simultaneously prepare youth for their environmental future, while inspiring collective action among adults today.

Novel education strategies such as the use of youth-to-adult intergenerational learning (YAIGL) may help to not only prepare youth for the future but also allow them to be advocates for change today. Based on a shared mutual understanding, adults are more receptive to receiving information from youth in their lives (Lawson et al., 2018; Parth et al. 2020). This has been found to be successful across many different subjects, including public health behaviors (Garcia et al., 2021; Lyu et al., 2020), attitudes towards diverse sexual identities (Morawska et a., 2015; Sifuentes, 2022), use of technology (Gamliel & Gabay, 2014; LoBuono et al., 2019), and EE-based knowledge (Blanchet-Cohen & Reilly; 2016; Gilleran Stephens et al., 2021). Within EE,

YAIGL has been employed in programs related to sustainability (Gill & Lang, 2018; Lloro-Bidart & Sidwell, 2020), species conservation (Gambino et al., 2009; Marchini & Macdonald, 2020), understanding climate change (Chineka & Yasukawa, 2020; Parth et al., 2020) and natural disaster resiliency (Williams et al., 2017; Zhong et al., 2021). Although promising, it must be recognized that not all studies resulted in clear YAIGL occurrence. As YAIGL may make inroads where other more traditional education approaches have failed, much is still needed to be explored about the implementation and impacts of YAIGL strategies in various EE programs.

### **Theoretical Framework**

YAIGL is a young field of study which fits underneath the umbrella of the well-established theory of socio-cultural theory of learning (SCT) (Kernan & Cortellesi, 2019; Vygotsky, 1980). SCT provides a lens on how relationships with others can develop one's understanding of the world (McGlenn-Nelson, 2005). It places importance on the roles social interactions with more knowledgeable others (MKOs) and cultural norms play on one's individual learning (Jarrett, 2022). Vygotsky founded SCT, describing learning and development as the integration of the learner in a collaborative context, where learning is gained through interactions with people, objects, and social events (Vygotsky, 1980). SCT also stresses how individuals can purposely encourage learning development in others (Armstrong, 2015). These individuals must have greater expertise in the subject than the learner (Safia & Mala, 2012). For example, someone in a social context with a desired knowledge or skill can guide others within that social context through social interactions until the desired knowledge or skill is achieved. To assess these learning outcomes, the Zone of Proximal Development (ZPD) can be used. ZPD can describe the level of an individual's knowledge, attitudes, or behaviors, and what one can

achieve with assistance of others beyond what could have been achieved alone (Vygotsky, 1980).

### **Literature Review**

As YAIGL only began to emerge in the early 1990s there are many gaps in the literature that need to be addressed (Duvall & Zint, 2007; Kernan & Cortellesi, 2019). A systematic literature review on YAIGL in EE research between 1992 and 2003, revealed only seven relevant articles comprising of ten studies (Duvall & Zint, 2007). As this is a growing field, building upon Duvall & Zint's (2007) literature review, Eldredge et al. (2023, *in preparation*) systematically reviewed for YAIGL in EE research over the past 30 years and was able to include 44 articles in their analysis. The thematic analysis revealed the following factors influence the occurrence and strength of YAIGL: 1) topic relevance, 2) educator enthusiasm, 3) adult involvement in assignments, 4) youth's perceived standing, and 5) appropriate program framing. Eldredge et al.'s (2023, *in preparation*) review also revealed that studies expected YAIGL occurrence to reach beyond youth's family members or community members involved in the EE programs. However, even though educators have been involved in studies (Chineka & Yasukawa, 2020; Gambino et al., 2009) youth-to-educator IGL (YEIGL) was not explicitly examined in the articles included in the review (Eldredge et al., 2023, *in preparation*). As such, in EE research specific contexts, there is little to no understanding about the role of educators in YAIGL. This is intriguing, as studies have indicated educators influence the strength of youth learning and YAIGL occurrence (Duvall & Zint, 2007; Eldredge et al., 2023, *in preparation*), suggesting the need to better understand what role youth play in influencing those that educate them.

The role of educators in successful YAIGL cannot be understated (Duvall & Zint, 2007; Eldredge et al., 2023, *in preparation*). Unfortunately, however, there seems to be a mass exodus



from the teaching field spanning decades, across both formal and informal contexts. For many Eurocentric countries the exit rates are between 30 and 50% (Struyven & Vanthournout, 2014). Research by Ingersoll (2002) reported that within the first five years of service, 46% of new teachers in the USA left their teaching positions. Reasons for the exodus include: decreased well-being (Ferguson et al, 2012; GBAO Strategies, 2022; Yang et al., 2019; Yu et al., 2014), a culture of performativity (Ball, 2003; Perryman & Calvert, 2019), lack of opportunities for advancement (Ferguson et al, 2012; Struyven & Vanthournout, 2014) and meaningful professional development (Ennes et al., 2021), job dissatisfaction (Perryman & Calvert, 2019; Struyven & Vanthournout, 2014; Yu et al., 2014), and low pay (Blood et al., 2002; GBAO Strategies, 2022). These factors have been shown to diminish teacher enthusiasm and create burnout (GBAO Strategies, 2022; Yu et al., 2014). Although these issues apply to all educators, there is little known about environmental educators specifically in the academic literature. However, it would not be a significant stretch to assume that many of the same issues impact those who lead EE. The future of EE relies on passionate educators who find satisfaction in their work and are committed to their craft. Therefore, innovative approaches to addressing a decades long issue of educator attrition should be investigated. Since educators have a positive influence on youth learning and IGL can be bidirectional, we assume educators can gain something of value from the youth-educator relationship and therefore could be a tool in the battle against the educator exodus.

Educators hold an important role in YAIGL occurrence for EE programs to reach beyond their students. Therefore, more research on YEIGL in EE needs to be investigated. This study set out to investigate YEIGL occurrence in an EE setting in central Pennsylvania and how both educators and youth can benefit from YEIGL. To accomplish this goal, novice environmental

educators, defined as having five or less years of experience (Ingersoll, 2002; Shohani et al., 2015; Wilhelm et al., 2000), were interviewed after their week-long teaching experience at a residential environmental education camp to allow the emic views of YEIGL to emerge. Through thematic analysis, the researchers aimed to address the following research questions:

1. Do educators in EE settings expect to be impacted through YEIGL by the students they work with?
2. What is the educator-reported impact of their students through YEIGL after an EE program?

By addressing these questions, we aim to aid educators in their abilities to perform their job for the betterment of themselves and their students.

### **Methodology**

The overall design of the project followed a qualitative approach, using a systematic process where data was thematically analyzed (Creswell, 2012) to understand YEIGL experienced by college-aged environmental educators at Shaver's Creek Environmental Center's Outdoor School (ODS). A thematic based qualitative research approach was used to understand the lived experiences of environmental educators at ODS, in order to describe the commonalities among these participants as it relates to the experience of YEIGL (Creswell, 2012). As research supports that one's learning can be influenced by those around them (Armstrong, 2015), and since ODS educators were divided into smaller groups to work different weeks with different schools each week, and had even smaller learning groups and cabin groups, each educator may have experienced a different reality. Therefore, an inductive approach was preferred to make

sense of ODS educators' perceptions of YEIGL occurrence to better understand this lived experience across the different weeks (Babbie, 2013; Creswell, 2012).

### *Study Setting*

Shaver's Creek Environmental Center (SCEC), an extension of Pennsylvania State University (PSU), serves as a resource to connect neighboring communities to their natural environment. SCEC offers an Outdoor School (ODS) for fifth graders in Huntingdon and Mifflin counties of Pennsylvania. ODS is a four-day, three-night residential EE camp. SCEC hosts ODS for five weeks in the fall and five weeks in the spring PSU academic semesters. Since the experience is sponsored by the primary schools, most fifth graders participate in the program, as opposed to those just children or parents/guardians who would be interested in environmental stewardship. This program is built into their school curriculum and their formal schoolteachers build upon the experience once they return to their classrooms. Some of the main goals of the program are for fifth graders to experientially learn about their natural environment and environmental stewardship, and for the undergraduate students to gain an understanding of instruction in EE and how the natural environment can aid general health and wellness (SCEC, 2020).

Generally speaking, the ODS educators consist of Learning Group Leaders and counselors trained by SCEC staff. Learning Group Leaders engage with the children during lessons, meals, evening programs and unstructured recreation time. Counselors are also classified as instructors because they play multiple instructor roles for the fifth-grade campers, including during educational lessons, team building exercises and cabin time. The Learning Group Leaders and counselors are undergraduate college students from PSU's University Park Campus in Centre County. To participate in the program, students take a two or three credit course covering

topics on environmental and outdoor education, group management, and general wellness in relation to nature.

Five public schools across three school districts in Huntingdon and Mifflin counties of Pennsylvania send fifth-grade students to attend Outdoor School, three of which are 100% federally funded to improve educational opportunities (FRPI, n.d.). Forty-seven percent of Huntingdon Area School District students are economically disadvantaged. For Mifflin County School District, nearly 51% students are economically disadvantaged (FRPI, n.d.). Over 48% of students in Juniata Valley School District are economically disadvantaged (FRPI, n.d.). Most of the students in these schools identified as White (91.2-97.5%), followed by identifying as 2 or more races (0.1-3.3%), Hispanic (0.1-4.1%), and Black (0.1-.6%) (FRPI, n.d.).

Although SCEC is located in Huntingdon County, many of the SCEC staff are from Centre County. Centre County has a higher socio-economic status than the counties SCEC serves in central PA: Huntingdon and Mifflin (CWIA, 2021). The LGLs and counselors are undergraduate college students from PSU's University Park Campus in Centre County, Pennsylvania (PA). The demographics of PSU's University Park Campus' student body are 63.4% White, followed by 7.44% Hispanic, 6.21% Asian, and 5.41% Black (PSU-Main Campus, n.d.).

## **Participants**

ODS educators from the Fall 2021 and Spring 2022 ODS seasons were recruited after their ODS field experience was completed. The ODS educators consist of Learning Group Leaders (LGLs) and counselors trained by SCEC staff. LGLs engage with the fifth-grade campers during lessons, meals, evening programs, and unstructured recreation time. Counselors

are classified as instructors as they play multiple instructor roles for the campers, including during educational lessons, team building exercises, and cabin time.

In total, 27 ODS educators consented to participate in this study: 10 First-Time Counselors (FTC); seven Returning Counselors (RC); and 10 LGLs. These subgroups were created to account for different years of experience and training. LGLs typically have previously served as counselors twice or have equivalent experience. Demographics for each of the identified subgroups is described in Table 1.

### **Data Collection**

The participants consented to partake in audio recorded semi-structured interpretivist interviews after each informant's field experience at ODS (Stakes, 2010). Post-program interviewing is a common approach to YEIGL research, including the semi-structured approach (e.g., Anderson, 2016; Schneller, 2008; Williams et al., 2017). Pre-planned initial open-ended questions were asked of all the respondents to compare the entire interview as well as responses by question across the respondents (Stake, 2010). Due to the organic conversational nature of the interview, if a response to a question was answered before the question was asked, the question was then not asked.

To address YEIGL occurrence from an EE program the following broad themes were created for the semi-structured interviews: 1) Program Expectations; 2) Experience of the Program; 3) Definitions of and Attitudes towards Environmentalism; 4) Expressions of Environmentalism during the Program; 5) Learning Experienced as a result of the Program. Under these five broad themes, 10 subthemes were crafted which included a list of probing questions for each subtheme. The probing questions were used to help provide fuller "textual and structural descriptions" of the experience in question (Creswell, 2012). A pilot study included a

representative of each of the three quota sampling groups: FTCs; RCs; and LGLs. See Appendix A for the interview guide.

Bernard (2011) suggests that 10 to 20 interviews can be adequate to reach saturation of understanding a lived experience. Also, Morse (1994) recommends a minimum of six interviews for studies focusing on lived experiences. Therefore, seven to 10 interviews were conducted for each subgroup, totaling 27. This aligns with Patton's (2014) recommendation of 30 interviews for other exploratory research, such as ethnographic and grounded theory studies. Interviews were conducted until saturation was reached.

### **Data Analysis**

Thirty-six hours of audio recordings were analyzed through an inductive approach to allow patterns of the lived experience of YEIGL to emerge in order to capture the emic perspectives of ODS educators' YEIGL experience (Creswell, 2012). Similar to Zimmerman & McClain (2013), an inductive thematic approach was used in this research.

Transcriptions of the audio recordings were initially auto-generated through the online meeting platform, Zoom. Then, transcriptions were repeatedly read through while listening to the audio files to ensure transcription accuracy using oTranscribe. Any discrepancies between the transcription and audio were edited to ensure accuracy of the transcripts. This approach allowed the researcher to become familiar with the data, which aided in understanding the data (Babbie, 2013; Braun & Clarke, 2006).

### ***Coding Framework***

To allow the emic views of YEIGL to emerge, inductive coding was applied to each entire transcript with a focus on answering the following selected prompts from the interview guide (See Appendix A).

### *Largest Influence*

1.5 Who did you expect to have the largest impact on your experience at ODS and why?

X: Who did have the largest impact on your experience at ODS and why?

### *Expectations*

2.2 What did you expect you would gain through interactions with the youth?

2.3 What did you expect to learn from youth, if at all? If not, why?

### *Experience*

3.2 How did youth impact your ODS experience?

3.3 What do you think you have learned from youth at ODS?

Responses to the prompts were combined into two categories to examine 1) Expectations of YEIGL (prompts 2.2 & 2.3) and 2) Experiences of YEIGL (prompts 3.2 & 3.3). As many of the participant responses overlapped between the Expectation prompts and between the Experience prompts, and used similar language such as ‘I hoped to learn’ or ‘I learned’, combining responses into either the Expectation and Experience category provided a broader view of what participants thought would happen related to YEIGL and what actually happened, including perceived learning, gains, and impacts. As over 60% of participants voluntarily provided responses to an unasked question: who did have the largest impact on your experience at ODS and why, these responses were coded as well. This question, denoted with an X, was not a part of the interview guide as themes of the interview guide focused on specifically the experience of youth’s influence. However, the amount of unprompted responses suggested the need for an analysis.

### *Coding Process*

Coding was conducted in cycles (Saldaña, 2009). The first cycle of coding involved grammatical (i.e. attribute coding), elemental (i.e. structural & descriptive coding), affective (i.e. emotion & value coding), and exploratory (i.e. holistic coding) coding (Saldaña, 2009). The second cycle involved pattern, focused, axial, eclectic, and elaborative coding (Onwuegbuzie et al., 2016; Saldaña, 2009). Through the second cycle of coding, the codes were placed into categories and then broader themes (Saldaña, 2009). Similar to Zimmerman & McClain's (2013) approach for thematic analysis, informed by Erickson (1986), as themes were crafted, examples were sought to support each theme. An educator's interview response could be broken down into smaller sections to be counted towards different codes.

## **Results**

The data analysis revealed that, overall, ODS educators expected to be and were most influenced by campers. However, most subgroups of educators had little to no expectations of what that influence may be. Through retrospective prompts on expectations and experiences of YEIGL, ODS educators expanded on how they expected and were influenced by campers. The findings focus on the different facets of YEIGL. Table 2 provides a summary of the findings. As an overview, the three main findings include:

1. The majority of the ODS educators expected and experienced campers as the largest influence on their overall experience.
2. As a cohort, prior to their actual experience, the majority of ODS educators expected that interactions with campers would lead to improving their teacher and leadership skills.
3. Overall, through ODS educators' experience of YEIGL, educators self-reported improvement in their teacher and leadership skills and a return to childlikeness.



In the following subsections the findings are discussed in further detail. Quotes with names and places either have pseudonyms or have been anonymized for blind review.

## **Largest Influence**

### ***Who would have the largest influence on the educators' experience?***

Overall, the majority of educators expected youth would have the largest influence on their ODS experience (51.85%, n=14). Both FTCs (50%, n=5) and LGLs (70%, n=7) expected youth to have the largest impact on their ODS experience. Only 28.57% (n=2) of Returning Counselors expected youth to have the largest impact on their ODS experience. They instead expected the LGLs, who are peer mentors, to have the largest impact on their ODS experience (42.85%, n=3). See Table 3 for examples from the dataset.

### ***Who did have the largest influence on the educators' experience?***

Seventeen of the twenty-seven participating educators provided an answer to “who did have the largest influence on your ODS experience?” unprompted (FTCs n=5, RCs n=5, LGLs n=7). The majority of each subgroup responded that the campers had the largest influence on their experience (FTCs: 60%, n=3, RCs: 60%, n=3, LGLs: 57.14%, n=4). See Table 3 for examples from the dataset.

## **Emergent Themes**

Ten themes emerged across responses: 1. positive mental health, 2. improve social-emotional learning, 3. increase socio-cultural knowledge, 4. meaningfulness of work, 5. improve teacher/leadership skills, 6. return to childlikeness, 7. inform life decisions, 8. little to no expectations, 9. increase appreciation, 10. connection to nature. Seven of the 10 themes were present in both Expectations and Experiences responses. In the following subsections, each of

the 10 themes will be defined and contextualized with an example from the dataset. The themes, definitions and examples are provided in Table 4.

### ***Themes that Occurred Across Both Expectations & Experience Responses***

**Positive Mental Health.** Six educators spoke about positive mental health in Expectations and six in Experience. Two counselors mentioned positive mental health in both expectations and experiences. Frankie, a RC, expressed how she hoped campers would help her stress less about college.

I was hoping that these kids would in the same way help me realize that, like stress is temporary, because I mean they're kids, like they know how to move on from their emotions quickly. They get upset, and then they're like okay next thing, and I don't know, I feel like I wanted to sort of gain that that quickness to pass by emotions from them, because it's easy to dwell in stress when you're a college student and I feel like they get upset over what they get to set over, then they move on. - *Frankie, RC*

**Improve Social-Emotional Learning.** Responses coded for SEL were present in both Expectations (n=5) and Experiences (n=13). Five of which had responses coded for SEL in both expectations and experiences. Educators specifically spoke about expecting and experiencing how campers interact and wanting to connect to campers. For example, Sam, a RC, shared that she expected to learn about campers in order to better connect with the campers and help them manage their emotions if they are struggling with the conflict.

It's just really interesting to see how they deal with their emotions but then how you can also access an outside force, guiding them through those emotions and working through them in a mature and respectful way. - *Sam, RC*

Campers also had an impact on educator's emotions. For example, Charlie, an LGL, shared that there was not much he expected the campers to teach him, but was surprised by how much of an impact they had on his life.

In ways of who I want to be, and who I am, and my emotional and mental picture of myself, they completely demolished that. So in the same way as they broke me down and spit me out they built me up and you know allowed the counselors and LGLs to be the best them as possible and you know that doesn't have to stay at Outdoor School you take that with you. - *Charlie, LGL*

Also of note, a FTC, Cameron, specifically stated they did not expect to learn anything in terms of developing interpersonal relationships, but that they would teach the youth how to manage relationships, however, upon reflection Cameron spoke about learning about different approaches to handle interpersonal disputes.

...like watching them like deal with disputes was interesting.... but just seeing how other people are able to deal with different situations and being more open to different approaches to issues and that sort of thing. - *Cameron, FTC*

**Increase Socio-Cultural Knowledge.** At ODS, as educators and campers came together from different backgrounds and stages of life, different perspectives and knowledge were shared, such as youth's families' livelihoods and worldviews, and youth's knowledge of nature, interests and current trends. For example, FTC Jessie, who aspires to pursue teaching as her profession, encourages campers to share their knowledge and stories and hopes to apply a similar approach to classroom learning.

this one bird made a sound, and the little girl next to me knew what bird it was, I was like 'How do you know what bird that is? like I don't know that'. So I like trying to listen,

‘what else do you know?’ ... they always have something that they know. I know one of the campers was trying to teach us a dance, cause they learned it on Tiktok or something. So they always have things to teach us as well, and I like learning from them... because they have such a optimistic and like happy perspective on things at times, and I'm like I need that refresher to also have that. - *Jessie, FTC*

Seven educators expected to gain new SCK and thirteen spoke towards experiencing SCK. Five of the seven educators who expected to gain new SCK, also reflected on experiencing SCK.

**Meaningfulness of Work.** Five educators shared expectations of feeling good for volunteering to teach campers. Two of which specifically highlighted their experiences of meaningfulness of work at ODS. A total of 10 educators expressed experiencing a sense of meaningfulness of their work. Upon reflection, FTC, Cameron, shared:

I didn't realize how great of an impact they would have on me like coming back from Outdoor School I just had like a sense of like a feeling of warmth in my in my chest of like oh like I was able to like give them this experience like this is so rewarding.

**Improve Teacher/Leadership Skills.** An LGL who had participated in ODS as an educator for four seasons reflected on what she learned from applying different teaching techniques that she had learned through the LGL training course to the ODS field component.

I think that was kind of a mix of learning about, you know, learning styles, and different types of reflections. And then, you know, actually experiencing campers coming in trying to figure out how those kind of fit in with or how they fit in with those, I suppose -

*Morgan, LGL*

Fourteen educators spoke about expecting to improve their teacher and/or leadership skills through YEIGL. Fifteen educators reflected on experiences that improved their teacher and/or

leadership skills through YEIGL, eight of which had responses related to improving teacher/leadership skills in both expectations and experience.

**Return to Childlikeness.** Six educators expected to have an experience in which they would return to childlikeness. Fourteen educators shared experiences of returning to childlikeness. An LGL, Austin, mentioned the regressive pull, a phenomenon in which an adult begins to act like a child due to being around a child or children for an extended period of time (ACA, 2019). This concept is mentioned in a training video educators watch before ODS begins.

They kind of make you more childlike whenever you hang out with them, which I like. Bob Ditter talks about that regressive pull, I like a little bit of regressive pull as a treat, you know, in reasonable amounts. It's just like fun to you know, kind of act like a kid around them. Then you can bring that into your real life and care about things way less. -  
*Austin, LGL*

**Inform Life Decisions.** Educators' experience at ODS may serve as a period to gather information to help inform life decisions related to having kids and the type of careers one may pursue. Four educators spoke of expectations of helping to determine life choices from working with youth at ODS. Eleven educators reflected on experiences of how interacting with youth impacted their future life choices. Three educators spoke about how YEIGL would, and did, impact their future life choices. For example, FTC, Devan, reflected on how his ODS experience opened his eyes to outdoor education more.

Just seeing it a little bit more in depth it just made me excited for the future, and kind of reinvigorated, you know, like, what do I want to do? I know I like working with people, I like being outside, I like agriculture and the environment. But how am I gonna translate that? And how am I gonna make an impact? So I think that was kind of a big thing for

me, was seeing personally how this experience can translate to my future career. How I can take these experiences and use them for future use - *Devan, FTC*

### ***Themes in Expectation Responses Only***

**Little to No Expectations.** Thirteen educators had little to no expectations of YEIGL. When reflecting on experiences, no one indicated that they learned nothing from youth. Kennedy, a first time ODS educator through SEC's internship program, with minimal teaching experience, expressed the following:

I didn't expect the youth to impact me as much as it did. I really thought I was just going there, be a teacher, just kind of tell them what they did, not really connect with them that much, but kind of just be there, and just be part of it.

### ***Themes in Experience Responses Only***

**Increase Appreciation.** During reflections on ODS experiences, three educators spoke about appreciation, stating how the experience made them grateful for their family, appreciative for their environment, and for the little things in life. FTC, Kyle, expressed how grateful she was for her family after learning about how not every camper has parents at home.

she's like 'well, I'm just like, I usually just live with my grandparents now' and I sort of like had it, like the feeling come over me of like 'I'm an only child and assume that they're just not being with their parents anymore.' And I'm very close to my parents because they're the closest family I have, and I came home and I gave my mom and dad like the biggest hug, because I realize how I like I have not told my parents, how grateful I am for them, that they're still together. - *Kyle, FTC*

**Connection to Nature.** Five educators expressed how their connection to nature was positively impacted by their experience and/or how they were impacted by how campers

connected with nature. For example, Parker, a RC, shared experiences of interacting with campers in nature that allowed her to look at nature through a different perspective and capped it off with how kids caring about nature can impact adults.

Like I said earlier, I learned so much from the kids at camp. And so well, we think that we're primarily teaching kids stuff. They're also teaching us stuff. It's a big reciprocal relationship. So they can influence adults by you know asking questions, and caring about the environment. - *Parker, RC*

### ***Educators' Expectations of YEIGL***

**What were educators' expectations related to youth-to-educator YEIGL?** Overall, the 27 ODS educators had 61 responses coded into the Expectations category, of which indicated expectations of interactions with youth would lead to improving teacher/leadership skills, at a higher frequency than other listed expectations (22.95%). Followed closely by having little to no expectations (21.31%). Figure 2 illustrates the proportions of themes discussed in the Expectations category by the whole cohort. Examining the subgroups of ODS educators, both FTCs (60%) and LGLs (50%) most often had little to no expectations. The majority of RCs (71%) expected to improve their teacher and leadership skills. Teacher/Leadership Skills category was also fairly high for FTCs (50%) and LGLs (40%). See Table 5 for complete breakdown of responses per theme by subgroups.

### ***Educators' Experience of YEIGL***

**What did educators experience related to youth-to-educator YEIGL?** When asked about the experience, the same cohort of 27 were coded into 87 responses. Overall, through educators' experience of YEIGL, ODS educators self-reported improvement in their teacher and leadership skills, and a return to childlikeness, at a higher frequency than other listed experiences

(16.09%), followed closely by an increase in their socio-emotional learning (14.94%) and socio-cultural knowledge (13.79%). Figure 3 provides the proportions of themes discussed in the Experience category by the whole cohort. Examining the subgroups of ODS educators, the majority of FTCs (60%) increased their socio-cultural knowledge through YEIGL. For RCs (71%), the majority spoke towards experiencing a return to childlikeness. LGLs expressed experiencing YEIGL in relation to improving their social-emotional learning (70%) and teacher/leadership skills (70%) more than any of the other experience themes. Each subgroup had 40% or more of their subgroup express increasing socio-cultural knowledge and a return to childlikeness. See Table 5 for complete breakdown of responses per theme by subgroups.

### **Methodological Strengths and Weaknesses**

Qualitative studies are a rich source of information, which can allow for a holistic view of the data to help explain something beyond what numbers could convey. As the main research question focused on understanding YEIGL and IGL is a young field of study (Bottery, 2016), an inductive approach allowed patterns of the YEIGL experience to emerge. Patterns, which could be used to help inform future studies. The findings of this research will have practical applications in the field of youth-focused environmental education and the broader primary school education field. As the informants for this study may be considered novice environmental educators since they may only have five or less years of EE experience, caution should be taken when generalizing these findings to all levels of teaching experience in environmental education. However, in this research a focus on novice environmental educators allowed the ODS educators to reflect on possible learning from youth, when they may not have otherwise taken an opportunity to do so. Reflections on experience is emphasized as key components of adult learning (Al Hamdany & Picard, 2020; Cerna et al., 2022). This may serve the novice



environmental educators well in their careers because it is early in their careers where they will establish their habits.

### **Discussion**

This research contributes to the literature on IGL in three ways. To our awareness this is the first study that we are aware of that intentionally explores how IGL occurs, if at all, between environmental educators and the youth they serve. As suggested by previous YAIGL research, youth can impact more than just their guardians and community member participants in a program (Ballantyne et al., 2001; Mitchell et al., 2015; Peterat & Mayersmith, 2006). Previous YAIGL research has examined or discussed learning through measures of knowledge (Marchini & Macdonald, 2020; Parth et al., 2020), skills (Gallagher et al., 2000; Mitchell et al., 2015), attitudes (Istead & Shapiro, 2014; Williams et al., 2017), and behavioral change (Gill & Lang, 2018; Schneller, 2008). In this study, educators indicated they gained knowledge, such as sociocultural knowledge from the population they served. Educators also acquired and/or refined skills in areas such as teaching and leadership. Some educators shared that they experienced a shift in attitudes or increased strength in attitudes towards feeling the meaningfulness of EE. Additionally, educators reported behavioral changes, such as how they engage with youth and incorporate environmental education into their future careers. Due to only interviewing educators once within six months of completing their ODS teaching experience, measuring lasting behavior changes did not occur. Although short-term behavioral changes may have occurred, such as reducing water waste, research suggests challenges to maintaining behavioral changes, such as economic, cultural, and situational factors (Moore & Boldero, 2017; Stern, 1999). Longitudinal studies are recommended to better understand lasting behavioral change (He et al., 2022). It should be noted that not all informants perceived youth as possible experts who could

teach them something, as many did not expect to learn anything at all from the youth. Although its impact on YEIGL occurrence was beyond the scope of this study, previous research suggests that it can be an inhibitor to YAIGL occurrence (Duvall & Zint, 2007; Eldredge et al., *in preparation*). Therefore, educators should consider being open to what youth have to teach them in order to maximize the benefits of IGL occurrence.

The educators learning through interactions with youth was to be expected as the theoretical underpinnings of IGL and SCT indicate that learning can occur through any two people where one is considered to be more topically knowledgeable than the other (Safia & Mala, 2012), can be bidirectional (Duvall & Zint, 2007), and this learning can occur in any social setting (Edwards, 2007). This occurrence is valuable to study because educators play an important role in implementing EE programs and fostering IGL beyond program participants in order to educate and equip people to address evolving environmental concerns. As indicated by Duvall & Zint (2007), educator enthusiasm for the topic they are teaching strengthens student learning and consequently YAIGL occurrence. Further understanding of YAIGL occurrence on populations such as educators who serve youth can contribute to literature on the benefits of IGL occurrence and help to guide best practices of YAIGL in EE programs.

Second, our results show that the interactions between youth and environmental educators results in numerous direct positive benefits for the educators. Educators: 1) reported improvements in their mental health, 2) increased their connection to nature, 3) grew in appreciation for various aspects of their lives, 4) were able to make more informed decisions regarding their career and personal lives, and 5) felt the meaningfulness of their work. Additionally, they not only learned about their own social emotional learning, but also that of another demographic, as well as gained socio-cultural knowledge of the other demographic, as

well as experienced a return to childlikeness. The latter three can provide direct benefits, as well as indirect benefits to those whom they teach.

To better understand direct positive benefits educators experience through youth interactions, a few of the direct benefits are described in more detail. Positive mental health provides people with the ability to overcome daily stresses and lower prevalence of depression, aiding in one realizing their own abilities and working productively (Galderisi et al., 2015). This is important for teachers who listed experiencing stress as a reason for attrition. Therefore, through interactions with their students, those in education may help counter the other factors contributing to stress. However, for those who advance, there may be an inverse relationship between career advancement and interaction with students. For example, school principals not only assist students, but also faculty, and have other administrative roles which do not involve direct interaction with students (Lunenburg, 2010). Therefore, the reward of advancing potentially comes at the cost of the positive mental health benefit perceived at their current level. A return to childlikeness is a form of neoteny, which benefits can include plasticity, playfulness, and optimism, which are argued as being essential for a balanced adult life (O'Sullivan, 2022). Adults also improving social-emotional learning can increase one's wellbeing, confidence and help establish positive relationships with others, including one's work environment (Wisconsin Department of Public Instruction, 2022). These direct benefits are also important in keeping teachers in their profession. Educators cite decreased well-being and job dissatisfaction as reasons for attrition (Yu et al., 2014). Therefore, fostering YEIGL could allow educators to receive benefits like increasing positive mental health and sense of meaningfulness of their work to counter poor mental health and feelings of dissatisfaction in their profession. Not only can these benefits help prevent attrition but also help make educators better at their jobs. Educators

who have a positive mental health are more committed to their profession and tend to be better educators (Yin et al., 2023).

Last, our study suggests that not only can YEIGL positively impact the educators themselves but may also indirectly impact the future participants educators teach. Youth impacted educators' SEL, SCK, and neoteny which can aid in improving teaching and leadership skills, which was another theme of YEIGL. Many educators stated the experience with youth aided in their teacher and leadership skills to become better educators, which included adjusting their teacher/leader approach in response to gaining SCK from campers and observing this demographics' group dynamics, impacting how educators socially and emotionally engaged with their students. Educators' competence in their own SEL allows them to role model these skills for their students as well as support educators' resilience (Wisconsin Department of Public Instruction, 2022). Additionally, learning to be more childlike could be beneficial in the classroom. Applying plasticity, playfulness, and optimism to their pedagogy can benefit their students (Kern & Wehmeyer, 2021). Being childlike helps teachers be curious and open to change. These techniques could be applied formatively during the educator's week and could be techniques taken with them for future application. Improving educator skills will make educators more proficient, and consideration of SCK and SEL can start to address culturally responsive teaching (CRT) to help provide appropriate program framing to help foster student learning and IGL as suggested by Eldredge et al. (2023, *in preparation*). CRT utilizes students' funds of knowledge to help them learn and grow in a meaningful way to themselves and their community (Kozleski, 2010). Therefore, it is important for educators to gain SCK from their students and relate course content to their knowledge. Also, teachers often cite lack of professional development (PD) opportunities as a contribution to attrition (McCreight, 2000). Traditionally,

PD involves teacher workshops which require time, a commodity that educators often lack. If teachers are open to YEIGL occurrence, they may recognize and take advantage of the youth-educator relationship to further develop their teaching skills as a supplemental PD experience.

Additional research is needed to begin untangling how expectations of YEIGL influences the positive impacts of educator learning. Overall going into the experience FTCs and LGLs had little to no expectations of learning from the youth and RCs expected to learn more from their mentoring peers, the LGLs, but in the end all subgroups reported being impacted the most by campers and in different ways by subgroup. The FTCs reported a high frequency in learning SCK from a demographic with which they had previously little experience. RCs who would be more familiar with the camper demographic, reported high counts in a return to childlikeness compared to the other subgroups. This could be because they previously gained SCK from previous teaching experiences, which allowed them to focus learning in a different way from the youth. As LGLs take a course on environmental education and only 40% would have had previous ODS teaching experience, their focus may have been seeing how what they learned in class applied to the field experience, which includes SEL and teacher/leadership skills. This shows that YEIGL can occur without expectations of it to occur, however previous experiences in teaching, teacher knowledge, or the lack of experience in these areas can impact what type of YEIGL is reported. Future research should investigate how previous experiences and expectations impact the positive benefits of YEIGL. This includes how educators knowing that youth can impact them, will then positively impact them. Also, these educators were engaged with campers for a full week, however, most EE programs are one-off situations. Research on YAIGL in EE suggests the length of time of a program is positively correlated with the strength

of YAIGL occurrence (Damerell et al., 2013; Sakurai & Uehara, 2020). Therefore, how more limited interactions with youth impact nonformal educators, should be explored.

### **Conclusion**

This study highlights how the relationship between educators and youth can result in positive impacts for both parties. Although most education focuses on how educators influence youth, this study demonstrates how the opposite also occurs. Educators receive direct benefits from YEIGL, which can also indirectly benefit educator's current and future students. To better understand the youth-educator learning relationship for the benefit of future educators and students, more studies on YAIGL should include or focus on YEIGL. EE is critical more than ever before as the world faces evolving environmental crises and educators play a huge role by equipping people with the knowledge and tools to aid in addressing these concerns. Therefore, attention should be given to understand how the field of IGL in EE research can foster the youth-educator bidirectional learning relationship and help the field move forward in a sustainable way.

**Table 2.1***Demographics of Participants, by Subgroup*

Demographic	Subgroup Category		
	FTC (n = 10)	RC (n = 7)	LGL (n = 10)
Gender Identity	50% Men 40% Women 10% Non-binary	85.71% Men 14.29% Women	30% Men 40% Women 30% Non-binary
Race/Ethnicity	90% Caucasian 10% Indigenous	100.00% Caucasian	100% Caucasian
Political Views	80% Progressive 20% Moderate	57.00% Progressive 29.00% Moderate 14.00% Conservative	80% Progressive 10% Moderate 10% Conservative
Urban v. Rural	40% Rural 60% Suburban	29.00% Rural 57.00% Suburban 14.00% Urban	50% Rural 40% Suburban 10% Urban
Major <sup>a</sup>	60% Environmental 20% Education 20% Other	71.43% Environmental 14.29% Education 14.29% Other	70% Environmental 30% Education
Years in College <sup>b</sup>	20% First-Year 10% Second-Year 50% Third-Year 20% Fourth-Year	29.00% First-Year 29.00% Second-Year 29.00% Third-Year 14.00% Fourth-Year	10% Second-Year 20% Third-Year 40% Fourth-Year 30% Graduate
Seasons of ODS <sup>c</sup>	100% First Season	100.00% Second Season	60% First Season 30% Second Season 10% Third Season

*Note.* <sup>a</sup>Environmental majors included majors that included some environmental element to the core study, education majors included majors that had “education” in the title, and other included all other majors.

<sup>b</sup>Years in college follows the Penn State University model, as opposed to using the traditional freshmen, sophomore, junior, and senior format.

<sup>c</sup>Seasons of ODS included seasons where actual contact with youth was made.

**Table 2.2***Summary of Findings*

<b>Subgroup</b>	<b>Expectations</b>		<b>Experience</b>	
	<b>Expectations of who would have the largest impact on the educators</b>	<b>YEIGL Expectations</b>	<b>Experience of who had the largest impact on the educators</b>	<b>YEIGL Experiences</b>
FTCs	Mainly Campers	Little to No Expectations	Mainly Campers	Increase Socio-Cultural Knowledge
RCs	Mainly LGLs	Improve Teacher/Leadership Skills	Mainly Campers	Return to Childlikeness
LGLs	Mainly Campers	Little to No Expectations	Mainly Campers	Improve Social-Emotional learning & Teacher/Leadership Skills
All	Mainly Campers	Improve Teacher/Leadership Skills	Mainly Campers	Improve Teacher/Leadership Skills & Return to Childlikeness



**Table 2.3***Overview of Expectations and Experience of Largest Influence of Others on Educators*

Subgroup	Expectations		Experience	
	Expectations of who would have the largest impact on the educators	Example from Dataset	Experience of who had the largest impact on the educators	Example from Dataset
FTCs	Mainly Campers	I would say the campers probably, and I think they did. I mean you're obviously working with multiple different people and roles. But I think the campers especially because you're spending the whole day with, and you're spending the most time with them. - <i>Devan</i>	Mainly Campers	I thought it was going to be the counselors, like making new friends, like I had mentioned and yeah, I mean just sharing our experiences together and maybe like forming a bond over like whatever we did out there but I mean I guess if we're just talking about the expectations part but I think it ended up being the kids who impacted me more than the counselors. - <i>Cameron</i>
RCs	Mainly LGLs	I feel like probably my Learning Group Leader expectations-wise because that's, both times, that's been someone that I've, for the first time that was someone that I looked up to a lot, and that I wanted to model my future times at Outdoor School after because they've more experienced in education than me - <i>Frankie</i>	Mainly Campers	Overall, I'd probably learn the most from the kids which seems funny, but there, yeah, there is a lot to learn - <i>Parker</i>
LGLs	Mainly Campers	Honestly, the kids, the kids are the biggest variable to me. And they really do control the flow of the experience. - <i>Austin</i>	Mainly Campers	Definitely the campers ... those kids taught me like you don't always need to do everything exactly that way and they didn't necessarily teach, they didn't teach me, it was just their demeanor that they taught me how to just let go a little bit. - <i>Harley</i>

Table 2.4

*Emergent Themes of Expectations and Experiences of YEIGL*

Theme	Defined	Example from dataset
Positive Mental Health	Positive mental health can involve reducing stress (WHO, 2004), relaxing (Smith, 2005), having fun (McCarthy et al., 2011) and slowing down (McKinlay et al., 2021). Other related terms included enjoying time with others, recentring, carefree/letting go of perfection and being happy/optimistic.	<p><b>Expectation:</b> “I can be <i>like</i> very stressed and high strung sometimes, and it definitely helps me relax to be around like a bunch of ten-year-olds that we're just hugging trees together, which is for Meet-A-Tree, just fun.” - Blake</p> <p><b>Experience:</b> “Yeah, they just let me feel like my mind was free, like my worries, that I would be constantly worrying about throughout the day. When I go to talk to a kid and play around in dirt or whatever, mess around in the stream, I wasn't thinking about anything else but that. And at that point in my life it was very hard for me to do that. So, when I did have those moments, I value them so so much.” - Morgan</p>
Improve Social-Emotional Learning	Social-emotional learning (SEL) involves one's management of their emotions and behaviors, self-awareness to build self-confidence and overcome challenges, social-awareness of their current community to show others respect and empathy, and fostering relationships (Ee & Ong, 2013). Other related terms included building connections, learning about how groups and individuals interact & problem solve (camper-camper and educator-camper), and personal development.	<p><b>Expectation:</b> “So I feel like I expected to learn more about how like groups interact” - Frankie</p> <p><b>Experience:</b> “interpersonal skills, getting to know each other as people” - Drew</p>
Increase Socio-Cultural Knowledge	Socio-cultural knowledge (SCK) is knowledge that is contextually situated (White, 2010). This includes cultural norms and values, religion and beliefs, and socio-economic and political issues (Mavuru & Ramnarain, 2017). Any references to knowledge which may be inherent to one group and shared with a different group was coded as SCK. Other related terms included interpretations, jargon, interests/hobbies, knowledge (both naturalistic & academic) and trends (jokes, dances).	<p><b>Expectation:</b> “By talking to them [campers], I would gain more experience with talking to a lot of different kinds of people”- Dakota</p> <p><b>Experience:</b> “I learned that like you know there's a lot of different people out there and this like, especially from where I'm from versus [<i>anonymized school district for blind review</i>], which is where the kids were from. You know there's very large differences in terms of lifestyles, in terms of you know even political beliefs.” - Lee</p>
Meaningfulness of Work	Meaningfulness of work involves the work having a positive meaning for the individual and the individual believes the work has a positive impact on others (Steger, 2016). Responses related to gaining a sense of accomplishment and/or a positive feeling for doing something meaningful and/or having	<p><b>Expectation:</b> “I mean, I just wanted to do it because I really enjoy working with kids. I thought that I was just gonna get a little bit of like just feel good, you know, <i>hey I def-</i> I'm doing something good here. I'm doing something that's, <i>you know</i>, gonna help people. Just to, I was just expecting, I was hoping to get warm fuzzies essentially.” - Lee</p>

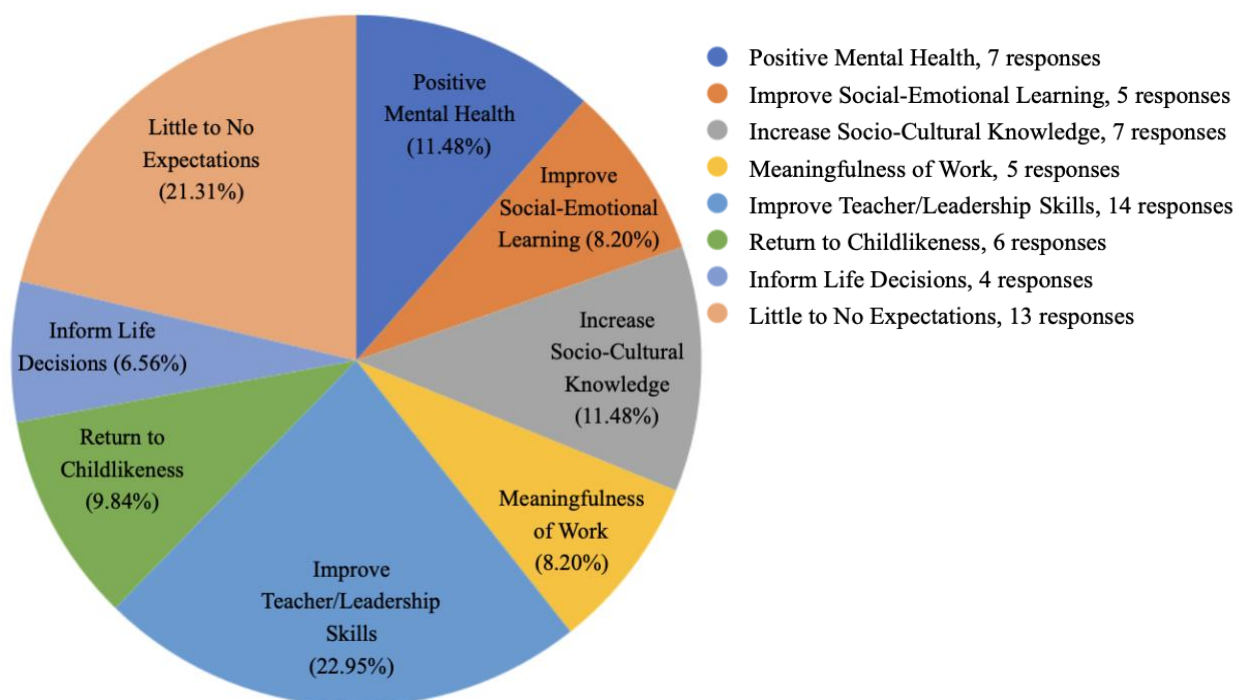
Theme	Defined	Example from dataset
Improve Teacher/Leadership Skills	<p>an impact were coded into this theme. Other related terms included being inspired and uplifted, and feeling good for overcoming challenges and meeting goals.</p> <p>A list of what may be considered teacher and/or leadership skills would be broad and may be difficult comprehensively detail. However, to deal with this, responses were categorized as for the improvement of teacher and/or leadership skills if they indicated its purpose as to improve/meet the educator's lesson objectives. Responses included but are not limited to terms related to group management (Gage &amp; MacSuga-Gage, 2017), patience (Banner et al., 2017), empathy (Banner et al., 2017; Levin &amp; Schrum, 2016), role modeling appropriate behavior (Lumpkin, 2008), engagement (Banner et al., 2017), and adaptability (Levin &amp; Schrum, 2016). Educators also used terms such as 'how to teach/be a leader' and 'be a better teacher/leader'. Participants also spoke towards gain teaching skills specifically in teaching to a certain demographic, adapting to campers' strengths and interests, learning to be open to different outcomes, how to have an impact, managing language used and learning in different settings.</p>	<p><b>Experience:</b> "I really like how much of an impact i can have upon them and how much fun really it can be that was that's really cool" - Sam</p> <p><b>Expectation:</b> "learning to adapt the program to the smartness of the campers is because i have to learn to change my plans because sometimes i make them too simple and so for my other stuff i also have to learn to change and adapt to the educational levels of these kids because sometimes they are very into the outdoors and sometimes maybe no t so much so that was something i had to learn kind of on the fly so that was interesting" -Harley</p> <p><b>Experience:</b> "They made me see like how I am as an educator and what things I need to adjust how like certain energy levels can change really how much people have a lot of energy it might be good in one instance but if you don't have a lot of energy you could be bad again so it really depends on the kids the time and the lesson itself." - Emerson</p>
Return to Childlikeness	<p>Adults have been found to return to a state of childlikeness to re-discover the "magic of the world" when engaging with children through play in nature (McVittie, 2017). Responses related to remembering one's own childhood, shifting their mindset to a state of wonderment and/or curiosity, and feeling like one's inner child was coming out were coded into this theme.</p>	<p><b>Expectation:</b> "be refreshed of what it's like to be a kid again, because I just forget sometimes that you can just go outside and have fun, and not worry about as much." - Taylor</p> <p><b>Experience:</b> "They really just like show you what it is to be like a child again, and like to play tag with them, and like they point out things like we were walking through the forest, and like some girl picked up like pine needles and she was like 'Oh, this is like nature's eyelashes' and it's like I haven't thought about nature like that way in years. I haven't played tag in years. So to like really gain that childlike excitement, for nature is really cool." - Parker</p>
Inform Life Decisions	<p>Many important life decisions take place during early adulthood. This could include decisions related to family and career (Mitra &amp; Arnett, 2019). The ways in which young adults' direct experiences with outdoor adventure activities impacted their education, career and lifestyle choices has been</p>	<p><b>Expectation:</b> "I guess it would be to see whether or not I wanted to have kids. That was my first thought, you know, when they clamber off the bus screaming and yelling that was, I was like 'oh okay this is gonna be eye-opening'" -Charlie</p> <p><b>Experience:</b> "It made me realize that I want to do a</p>

Theme	Defined	Example from dataset
	examined throughout the research literature (MacKinnon, 2000). Other related responses included deciding college major and incorporating EE into daily life.	career in environmental education and that's pretty huge." - Austin
Little to No Expectations (Expectations Only)	Responses related to no expectations, never going in with expectations, not [learning] a lot, and did not expect to learn (in general or specific concepts like interpersonal skills & content) were coded into this theme.	<b>Expectation:</b> "I didn't really think I would learn anything from them honestly." - Alex
Increase Appreciation (Experience Only)	Alder & Fagley (2005) refers to appreciation as relating to "feelings of connection to what we have, to what we experience, and to life itself. This included more appreciation of nature, how kids interact with nature, grateful for family and recognizing the importance of the little things.	<b>Experience:</b> "I would say I definitely grew in a lot of ways mainly just like seeing the kids interact with this like overnight like Camp experience really like opened up my eyes to like something new and I think it's just allowed me to be more appreciative of nature in general and how the kids interact with it" - Dale
Connection to Nature (Experience Only)	Connection to nature is a relatively young construct in social-psychology used to help explain pro-environmental behaviors (Drescher et al., 2022). Cheng & Monroe (2010) created a connection to nature index, which includes enjoyment of nature, empathy for its creatures, sense of oneness, and sense of responsibility. Responses related to connecting to nature, which did not fit with the previous themes, were coded into this theme. This included learning how oneself and others interact/connect with nature and care for nature.	<b>Experience:</b> "It also affected my curiosity. and it's my connection to nature by keeping it alive" - Austin

*Note.* Themes crafted from 148 coded responses from the 27 educators on Expectation and Experience of YEIGL.

**Figure 2.1**

*Themes of 61 Interview Responses to Expectations of YEIGL Across 27 Educators*



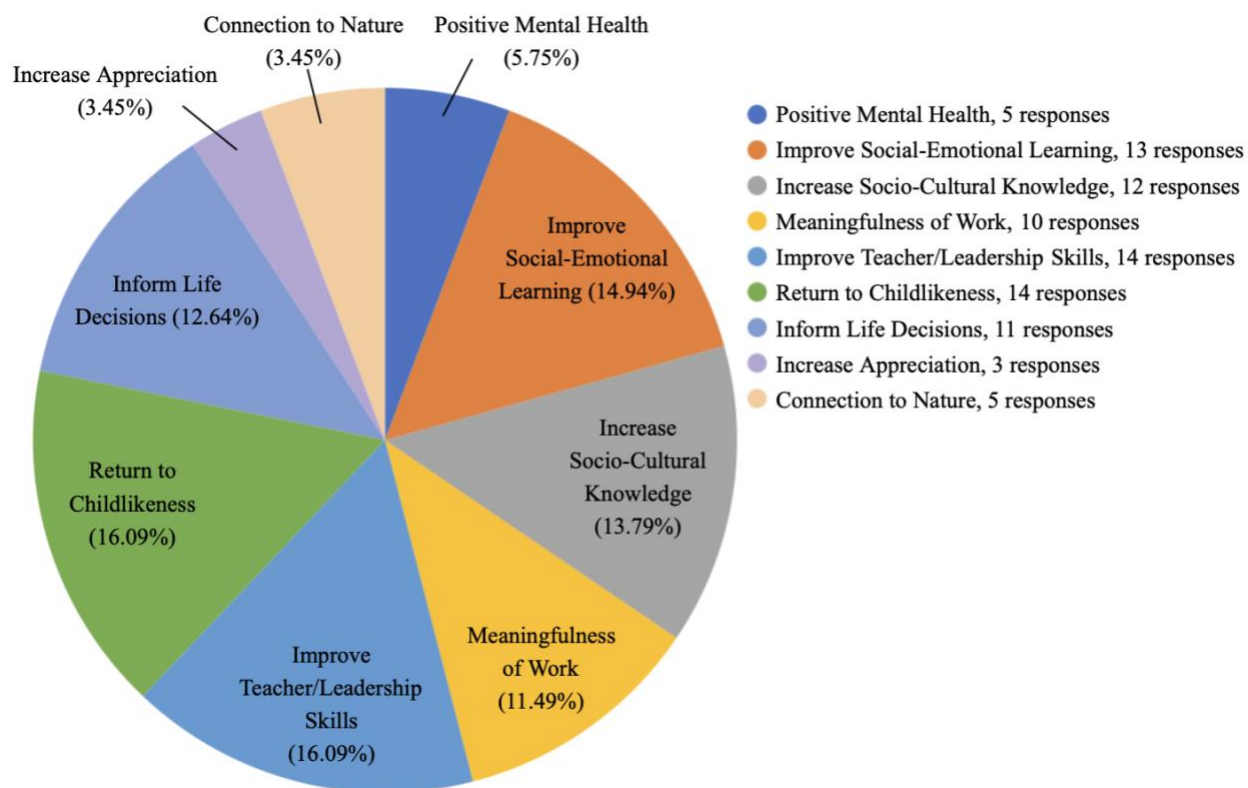
**Table 2.5***Breakdown of Themes by Expectation & Experience and Subgroup*

Theme	Subgroup	n	Expectations		n	Experiences	
			% Subgroup	Combined Counselor Subgroups %		% Subgroup	Combined Counselor Subgroups %
Positive Mental Health	FTCs	3	30%	29%	2	20%	24%
	RCs	2	29%		2	29%	
	LGLs	2	20%		1	10%	
Improve Social - Emotional Learning	FTCs	2	20%	18%	5	50%	35%
	RCs	1	14%		1	14%	
	LGLs	2	20%		7	70%*	
Increase Socio - Cultural Knowledge	FTCs	4	40%	35%	6	60%*	47%
	RCs	2	29%		2	29%	
	LGLs	1	10%		4	40%	
Meaningfulness of Work	FTCs	1	10%	12%	4	40%	35%
	RCs	1	14%		2	29%	
	LGLs	3	30%		4	40%	
Improve Teacher/Leadership Skills	FTCs	5	50%	59%	5	50%	41%
	RCs	5	71%*		2	29%	
	LGLs	4	40%		7	70%*	
Return to Childlikeness	FTCs	3	30%	24%	5	50%	59%
	RCs	1	14%		5	71%*	
	LGLs	2	20%		4	40%	
Inform Life Decisions	FTCs	1	10%	6%	3	30%	41%
	RCs	0	0%		4	57%	
	LGLs	3	30%		4	40%	
Little to No Expectations	FTCs	6	60%*	47%			
	RCs	2	29%				
	LGLs	5	50%*				
Increase Appreciation	FTCs				2	20%	12%
	RCs				0	0%	
	LGLs				1	10%	
Connection to Nature	FTCs				0	0%	18%
	RCs				3	43%	
	LGLs				2	20%	

*Note.* Subgroup totals: 10 FTCs; seven RCs; and 10 LGLs. Asterisks(\*) indicate the highest percentage of each subgroup coded into themes.

**Figure 2.2**

*Themes of 87 Interview Responses to Experience of YEIGL Across 27 Educators*



## Chapter 3

### Conclusions And Reflections

This study set out to begin to address a gap in IGL literature on youth-to-educator intergenerational learning (YEIGL). I gained insights into how the youth-educator relationship impacts the educator both for their own gain, as well as for the benefit of their students. For example, youth had a positive influence on educators' wellbeing and educators improved their teaching skills through experience working with youth, which then could benefit the youth's learning process/environment (Yin et al., 2023). These variables should be taken into consideration when creating or improving an educational intervention to improve student learning and YEIGL occurrence (Duvall & Zint, 2007; Eldredge et al., 2023, *in preparation*). Consideration of these variables could also help counter factors contributing to teacher attrition, such as lack of well-being, job satisfaction (Yu et al., 2014), and professional development (McCreight, 2000).

The inductive approach to this study allowed me to explore what constitutes IGL. For example, through my developed coding scheme, I coded a response as IGL occurrence, however, the informant stated they did not think it was learning per se, but rather an observation. As what is considered a "generation" is inconsistent, similarly what is considered "learning" from IGL studies is vague/inconsistent. In my proposed model depicting youth-to-adult IGL (YAIGL) occurrence (Figure 1), the transfer of knowledge, attitudes, skills and behaviors occurs via intergenerational dialogue. However, educators expressed learning from campers and their peers through observing others' actions, such as how one was treating each other and the environment, as well as through visual indicators such as clothing (camouflage and a Smokey the Bear image). Unfortunately, examining this aspect of YEIGL occurrence was beyond the scope of this study.



What is considered IGL, how the transfer occurs, and its benefits, should be explored further and applied to future EE research and programming.

## **Research Application**

### ***For Practitioners***

The findings from this study will be used to create an analytical account of informal learning practices of ODS instructors from their campers and help ODS Leadership understand the current norms and values of their educators. ODS Directors can use these findings to inform future practices of ODS. To help foster YEIGL occurrence, as part of the training courses for the ODS educators, ODS Leadership can: 1) help guide educators' expectations to be open to learning from youth in various ways, 2) train educators to be more intentionally observant of campers' behaviors and dialogue, and 3) encourage youth-led conversations. ODS Leadership can also use YEIGL for the benefit of the campers by providing further instruction to educators on how educators can adapt their lessons to the interests of their campers during their ODS teaching experience, as well as future teaching experiences, resulting in a more culturally responsive educational setting (Villegas & Lucas, 2002). The dissemination of the ODS instructor experience and learning outcomes may inform other nature centers, outdoor science education facilities and formal primary school science courses on how to foster YEIGL in EE programs. It will also help EE programs and their sponsors recognize and take advantage of the direct benefits for the educators, and indirect benefits for the EE program and community.

### ***For Researchers***

This research contributes to the theoretical discussions on YAIGL, as this study highlights YEIGL, an area discussed, but minimally researched in IGL research in the EE setting (Eldredge et al., 2023, *in preparation*). This study can act as a guide for future YEIGL research

designs and codebooks. As this study focused on novice educators, replicating this study with more seasoned educators could help address the educators' experience as a variable influencing YEIGL occurrence and what type of learning is occurring, such as hard and soft skills acquired through the experience. Future YAIGL research should consider the role the educators play in the EE intervention and study IGL occurrence to educators in addition to other adults connected to the program youth in various roles. For YEIGL, what factors influence YEIGL occurrence should be explored for the benefit of practitioners, so they can better foster YEIGL occurrence for the benefit of themselves, their students, and the wider community.

### **Lessons Learned**

This process provided me with valuable qualitative research experience I hope to apply to future research. From this experience I would adapt several changes in my approach. Areas of changes would include recruitment, recording methods, interview guide, and transcriptions.

### ***Recruitment & Engagement***

I would adapt when and how I recruited informants. It was harder to recruit informants when there was an overlap in research opportunities for the same demographic, even though participating in these studies were not exclusive to each other. Once the other research opportunity concluded I received a higher interest rate in my study. To improve participation rate, I found that asking in person and handing each possible participant a flyer was more effective than digital marketing. Additionally, asking one-on-one versus a large group call for responses improved the participation rate. Finally, educators were more likely to participate if I had established a relationship with them, such as joining their learning group in the field for an afternoon. I believe it helped them remember me, what my research was about, and why it may be important to not only ODS but also themselves. Being a participant observer also provided me

with better rapport with the educators during the interview process and helped provide more context/insight when analyzing/trying to understand/interpret their responses. Therefore, I would increase my time as a participant observer to aid recruitment and understanding of the data.

### ***Recording Methods***

I would also reconsider how I recorded the interviews. For the few who opted to meet in person I continued to record the interviews over zoom instead of using the other recording devices available to me. After these interviews I realized the audio was poorer and harder to transcribe. Also, I opted to interview someone over the phone who was driving. I decided to do this to help reach saturation for each subgroup. However, the participant was not solely focused on the interview and cell reception was poor for part of the interview. Therefore, I believe these factors impacted the quality of that interview and I would not repeat this option.

### ***Interview Guide & Research Breadth***

Since the interviews averaged 80 minutes and covered a broad spectrum of themes related to YEIGL, I would shorten my research scope and therefore the number of questions to focus keenly on a few concepts. This would aid in the interview process, making it shorter for those who agreed to partake in the study and allow time for additional interviews with other possible informants, as well as with the time it took to analyze the data. Unfortunately, my analysis only covered a portion of my data. From the collected data, additional research questions arose and could start to be investigated, such as: 1) What factors foster or inhibit YEIGL occurrence? 2) How does one define learning and how may that vary across individuals? As well as how it impacts the type and strength of learning that occurs? 3) When does YEIGL occur/is realized? During the experience or upon reflection? 4) Is the YEIGL maintained over time?

### ***Transcriptions, When, & To What Level***

Due to a small window of time where I was receiving interest in participating in my study, I did not have time to transcribe as I was also conducting the interviews. I would try transcribing and initially analyzing the responses as I continued in the interview process to have a better understanding of what sort of clarifying questions would be helpful and to have a better sense of when saturation was met. I also spent a large portion of my time on trying to make all transcriptions as clean as possible, including grammar which I found unnecessary if I was not quoting the response in the write-up or the response was not coded at all for the questions I decided to focus on. This could have saved on time to allow me to move further along at a faster rate while still maintaining understandable dialogue.

### **Limitations**

Findings from this study can be used as guidance for future research, however, there are limitations to this work. SCEC ODS is in a unique position to offer college students course credits to training to be environmental educators and leading youth for a weeklong program. Therefore, the educators are mainly novices and at a point in their lives where they are exploring career and life choices. Also, in IGL in EE research, many of the programs are led by nature centers or in formal education settings as day programs (Eldredge et al., 2023, *in preparation*). Therefore, the weeklong overnight experience together could be a factor influencing YEIGL occurrence. This study should be viewed as a case study and inspire deeper investigation of these various elements before any generalizations can be made. As an inductive case study, I was able to capture a range of perspectives while limiting potential bias of expectations of results to aid in the greater understanding of the IGL experience.

## **Positionality**

As a 31-year-old white woman local to the region of the study, who is also classically (i.e., the Westernized and co-opted norms of typical education systems) trained in EE and working for the university from which this study was being conducted, I am in a unique position to understand the various perspectives of all those involved. I was once an ODS fifth-grade camper Spring 2002 and LGL Spring 2021, and a course instructor for the LGL class 2021-2023. These commonalities and time spent at the program participating in the learning group activities hopefully aided in the research process by having all those involved have good familiarity with me and me with them, as well as providing me with a better understanding of the experiences the participants were describing in their interviews. Being well versed in the program and the parties involved allowed me to focus on the differences that the participants brought to the experience. However, I recognize my positionality is shaped by my privilege and access to resources. Regular meetings with my academic advisor were held to help minimize the filtering of the ODS educators' experiences through my own cultural lens and personal ODS experiences. In striving for a more comprehensive view to my research, I seek to actively listen to those with a different lived experience.

## **Personal Reflections**

In being true to my study's purpose, I want to recognize the learning I gained from youth and college students I interacted with at ODS and through this research project. Post this process, I discovered my own learning mirrored that of the educators:

1. I improved my research skills through testing them out on informants.
2. I also learned about what the college students valued from their ODS experience and hope to apply findings to be a better facilitator of ODS.

3. I experienced my own sense of return to childlikeness.
4. I continue to appreciate the work I do in seeing the impact it is having on kids when they had “Aha” moments in nature (kids really caring about the community meeting).
5. I learned new information about plants I did not know beforehand.
6. It continues to solidify my career choice in EE.
7. I also wanted to spend as much time out there as I could as it was fun and improved my mental health.
8. I see nature with new eyes and feel a different sense of connection and appreciation for it than I had before based on positive interactions with kids and nature.
9. Through observations and participation, the value of hands-on learning and being responsive to the youth’s interests impacts my approach to EE.

As I continue to pursue academic research on IGL in EE, I hope to continue to recognize what I am learning from program participants for the betterment of myself and my profession.

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**Appendix:**  
**ODS Interview Guide**

**Theme 1: Self-Expectations for ODS**

1. First, I want you to reflect on the expectations that you had for your time at ODS [*allow them to openly reflect*].

***Probing Questions:***

1. Tell me about what motivated you to become a counselor or learning group leader.
2. What expectations did you have about your ODS experience before attending your ODS week?
3. What did you list as your goal/what did you want to accomplish during your time at ODS?
4. How did you expect to impact the youth at ODS?
5. Who did you expect to have the largest impact on your experience at ODS and why?

**Theme 2: Expectations of Youth at ODS**

2. Next, I want you to think about and reflect on the expectations you had for the youth attending ODS [*allow them to openly reflect*].

***Probing Questions:***

1. How did you expect youth to benefit from participating in ODS?
2. What did you expect you would gain through interactions with the youth?
3. What did you expect to learn from youth, if at all? If not, why?

I would now like to move to reflecting on your experience at ODS.

**Theme 3: Retrospective Reflections on ODS Experience**

3. Please tell me about your experience at ODS [*allow them to openly reflect*].

***Probing Questions:***

1. How was your ODS experience what you expected or not what you expected?
2. How did youth impact your ODS experience?
3. What do you think you have learned from youth at ODS?

The next set of reflection questions relate to environmentalism. Before continuing with reflections of your ODS experience, I would like to investigate the meaning of environmentalism.

**Theme 4: Definition of & Attitudes towards Environmentalism**

4. How is environmentalism present in your life? *[allow them to openly reflect]*.

***Probing Questions:***

1. How would you describe an environmentalist?
2. Do you consider yourself an environmentalist? Tell me more.
3. What is a question in which the answer is environmentalism?
4. List as many ways as you can think of that one can take that would be considered environmental action.

**Theme 5: Definition of & Attitudes towards Youth Environmentalism**

5. Please share your thoughts on youth's role in the environmentalist movement *[allow them to openly reflect]*.

**Probing Questions:**

1. How would you describe environmentalism to youth?
2. How could youth be environmentalists?
3. How influential could youth be as environmentalists? Please elaborate.

Thank you. Let's now continue with questions related to your specific time at ODS as it relates to environmentalism.

**Theme 6: Retrospective Reflections on Environmentalism at ODS**

6. Please describe instances you saw environmentalism discussed or in action at ODS

*[allow them to openly reflect].*

**Probing Questions:**

1. Where did environmentalism take place or was discussed at ODS?
2. With whom did environmentalism take place or was discussed at ODS?

**Theme 7: Retrospective Reflections on Youth Environmentalism at ODS**

7. Reflect on times you saw youth environmentalism discussed or in action at ODS *[allow them to openly reflect].*

**Probing Questions:**

1. If I asked ODS youth to describe environmentalism, what might they say?
2. How concerned did youth seem for their natural environment at ODS? Can you give an example? Counter example?
3. How did youth demonstrate environmentalism at ODS? (If not at all, please share your reflections on the lack of any youth environmentalism at ODS.)

**Theme 8: Disagreement on Environmentalism at ODS**

8. Next I want you to think about and reflect on instances of disagreement on what environmentalism is or could be at ODS *[allow them to openly reflect].*

**Probing Questions:**

1. Please give an example or two of a time when someone at ODS said or did something they indicated as environmental action that you do not consider environmentalism.
2. How did that make you feel? (How strong of an emotional response did you have?)

**Theme 9: Personal Change related to Environmentalism as a Result of ODS**

9. Please share what you have learned about environmentalism by participating in ODS  
*[allow them to openly reflect].*

**Probing Questions:**

1. How, if any, have your opinions on environmentalism changed as a result of participating in ODS? (If none, please explain why.)
2. At ODS, who had the largest influence on your understanding of environmentalism and why? (If no one, please explain why.)
3. Where did these influential moments take place? Please elaborate. (For example: during a meal, while hiking, during an activity.)
4. When did this change occur? Please tell me more. (For example: in the moment, after a period of reflection, only realized at the end of the week.)

Ok. I have a few remaining questions related to demographics.

**Demographics**

1. What are your preferred pronouns?
2. What is your race or ethnicity?
  - i. (White, Black, Hispanic, Asian or Pacific Islander, Native American, Other)
2. How do you identify politically?

- i. (Very conservative, Somewhat conservative, Moderate, Somewhat liberal, Very liberal)
3. What is your major?
4. What year of college are you currently completing?
5. Would you say you grew up in an urban, suburban or rural area?
6. How many semesters have you participated in ODS as an instructor (counselor/learning group leader)?