Studies in the Education of Adults

ISSN: 0266-0830 (Print) 1478-9833 (Online) Journal homepage: https://www.tandfonline.com/loi/rsia20

Situating learning in the context of sustainability: Indigenous learning, formal schooling and beyond

Abeer Salem

To cite this article: Abeer Salem (2019) Situating learning in the context of sustainability: Indigenous learning, formal schooling and beyond, Studies in the Education of Adults, 51:2, 161-179, DOI: 10.1080/02660830.2019.1604306

To link to this article: https://doi.org/10.1080/02660830.2019.1604306

STUDIES IN THE EDUCATION OF ADULTS
2019, VOL. 51, NO. 2, 161–179
https://doi.org/10.1080/02660830.2019.1604306

Taylor & Francis
Taylor & Francis Group

ARTICLE

Situating learning in the context of sustainability: Indigenous learning, formal schooling and beyond

Abeer Salem

Prescott College for the Liberal Arts, The Environment and Social Justice Prescott, Prescott, AZ, USA

ABSTRACT

This paper focuses on learning by a group of Bedouin women in a community in eastern Egypt. It discusses the dynamic nature of indigenous learning, and the adaptability of its patterns and content. It describes how its patterns may yield to modern learning systems, and how traditional knowledge and livelihoods may be lost in the process. It gleans ideas on how traditional and formal learning can meet, situating learning in the larger context of sustainability.

KEYWORDS

Indigenous learning; traditional knowledge; Bedouin; formal schooling; sustainability; Egypt

Introduction

Learning in indigenous communities is a unique experience. The diverse learning patterns, the elements to be learned and the ways of learning are very distinctive to the particulars of each of these communities. The diversity of local and traditional knowledge stems from the fact that this knowledge is based on the immediate and ever-changing realities of the community and corresponds to its uniqueness. Hence, indigenous ways of learning are as varied and diverse as indigenous communities are, varying in both place and time. The more we know and learn about indigenous people and indigenous knowledge, the more we realise the diversity of this knowledge; it is hard to generalise from each local community.

While the diversity of indigenous knowledge may be a resultant of a variety of different reasons, the relationship between learning and the immediate environment a community lives in is key to determining the kind of needed knowledge in a particular locale. It is plausible to think that this holds true especially in communities that live very close to the land and who depend on the immediate environment for their livelihoods like Bedouins, for example, to whom the environment is an important aspect of their life experience. Therefore, whilst learning is related to and based on the social, cultural and environmental contexts in these communities, all contextual changes will affect and reflect on the patterns of learning as well. Indigenous communities as they steer their way through social, cultural and environmental change, navigate

CONTACT Abeer Salem asalem@prescott.edu October University for the Modern Sciences and Arts (MSA), Egypt.

through different learning content, approaches and patterns. Hence, in each of these communities, a new mix of learning – a hybrid mixing the new and the traditional – emerges.

This paper focuses on the ways of learning by a group of Bedouin women[1] in a community in eastern Egypt; on why and what they learn within their context. It discusses the dynamic nature of indigenous learning, and the adaptability of its patterns and content to serve the needs of the learner and the community. It examines how, in the context of change, some patterns of indigenous learning may yield and give way to new systems of learning, and how traditional knowledge and livelihoods may be lost in the process. Given the porous boundaries defining age-relevant learning in this community, this paper discusses life-long learning as a defining feature of learning in Bedouin communities rather than age-specific learning. It seeks to contribute to our understanding of the dynamics of learning for Bedouin women and help us glean ideas on where and how traditional and formal learning and education can meet, situating learning in the larger context of sustainability. Sustainability is defined as the sum of locally embedded and thriving communities that are interlinked, interrelated and are mutually engaged in healthful relationships.

The findings analysed in this paper are part of a study I conducted on several communities in Egypt that live close to nature. I utilised a multiple case study design that employs an eclectic data collection strategy, drawing information from semi-structured in-depth interviews, focus groups, group discussions and conversations (Salem 2013). I supplemented the results of that study with observations and information gleaned from further interviews, discussions and conversations with Bedouin community members during subsequent visits over 5 years after completion of the study. Being a female Egyptian outsider, we communicated in Arabic although Bedouin is their main language. Their proficiency in Arabic and my limited knowledge of Bedouin enabled us to communicate and engage in meaningful discussions. Meetings with women took place in their homes, or in the workspaces where they sell their embroidery, or during the tea breaks through their herding trips.

The communities that contributed to the larger study live close to nature and have their lives defined by the environment in which they live. Their distinctive lifestyles, therefore, require a set of skills, knowledge and capabilities that are not readily available to them through formal education, but are available through informal mechanisms of socialisation including elders, other community members, informal learning and lived experience. For example, Bedouin community members who contributed to this study have declared that they learned about climate change and its effect on their livelihoods through sheer observation of the changes in their immediate environment. This is only one example of the kind of knowledge learned through traditional ways. One of the objectives of the larger study was to glean what kind of knowledge, vision, ideas and insights these communities can contribute to our thinking for the future.

The conceptual framework for the larger study is informed by insights from different disciplines, theories and schools of thought. These include theories of development, sustainability, learning, environmental identity, local-based knowledge, place, creativity, complexity, living systems and associated concepts.

Theoretical underpinnings

Indigenous learning is closely related to the question of sustainability. The basic theoretical underpinnings of the field denote how the emergence of formal (modern) education (schooling) has affected the variety and diversity of learning practices around the world. It denotes education as a process that occurs at a distance from reality and the context within which it occurs. These also define attributes of indigenous education revealing alternative approaches to learning that stress those variables that are largely missing from the modern learning patterns and practices.

Formal education is largely criticised for producing modernised individuals and thus transforming society into a decontextualised version. In terms of time, place and content, schooling does not correspond to the needs of communities where livelihoods are closely related to the land (Krätli 2001, Birch *et al.* 2010, Suliman *et al.* 2017). Moreover, the idea that education can provide better livelihoods is being questioned by Indigenous communities (Aikman 2002) underscoring the importance of contextual relevance and diversity (Rivière 2009). In Africa, for example, a call for relevant education is echoed while emphasising the importance of local knowledge for real development (Hoppers 2000, Nyamnjoh 2004, Venter 2004, Nsamenang 2005, Breidlid 2009, Shizha 2010, Aikman 2011, Higgs 2012, Nsamenang and Tchombe 2011, Darko 2014).

In contrast, the richness of indigenous education is reflected in its affiliation with nature and with life itself. Education in indigenous communities reflects a pathway that allows for development and transformation; it is a journey to become fully human (O'Sullivan and Taylor 2004). Indigenous African education, for example, plays a vital role in the transmission of values that Africans consider to be essential in understanding and experiencing the fullness of life. Education, hence, is not a process or institution separate from everything else in life. There is no distinction between formal or informal education. The term *education* is a Western concept that does not speak to the traditional African reality, in which the entire community is continually engaged in learning and teaching. In traditional Africa, learning begins very early in life, soon after birth, and continues to old age. The whole of life is a process of learning to become fully human, to attain personhood (Tedla 1992). Traditional education is communal, where the whole community is not only the teacher but also the classroom (Semali 2002).

Indigenous Indian education is described as equivalent to breathing in life or to be with life. Community and social relationships are among the foundations of indigenous education. Ultimately, the goal of a right and true education is to become *complete* as a man or as a woman, to become fully alive and a realised human being in a harmonious relationship with one's inner and outer worlds (Cajete 2004).

Sterling presents another view on education as conducive to sustainability, as essentially transformative, constructive and participatory. This is another major departure from the model of modern education as transmissive and as one of social reproduction and maintenance, towards a vision of continuous co-evolution where both education and society are engaged in a relationship of mutual transformation – one which can explore, develop and manifest sustainability values (Sterling 2001).

The different views of education reflect a continuum of learning approaches that may be considered contradictory but may be considered complementary as well. These

views perhaps represent the evolution of our understanding of learning and its role in society. It is reasonable, therefore, to discuss attributes that make indigenous education quite distinct from formal education.

The pedagogy–andragogy nexus: life-long learning

The relationship between children's learning (outside of formal school) and adult learning is complex in indigenous communities for various reasons. One of the salient features of learning in Bedouin communities is that the boundaries that mark the end of children's learning and the beginning of adult learning are mostly blurred and overlapping. Learning continues throughout people's lives; it barely has a starting point or an endpoint. This entails life-long learning as a basic premise of learning in this Bedouin community. Problem solving as one of the main characteristics of adult education (Knowles *et al.* 2005) can be found in both children's and adult learning in this community. This also applies to experiential education (Kolb 1984), while being a central concept in adult education, it is a basic component of learning for all ages in Bedouin communities.

Teaching and learning

Different kinds of learning are an outcome of organic learning processes. Cultural learning from observing and opting in (Rogoff *et al.* 2014), social learning through watching other people model various behaviours (Bandura 1971) and non-intentional and unconscious learning through application and experience, which constitutes the foundation of most of what is learnt in any learning situation (Rogers 2014). This learning is much deeper and longer lasting than many other kinds of learning and it happens continuously; and while seemingly vague and chaotic, it constitutes the basic tenets of indigenous learning (Rogers 2016). These different types of learning denote a somewhat similar process where the learner observes, listens, asks questions, experiments and implements accordingly.

Indigenous ways of learning are not focussed on the idea of imparting or transmitting knowledge like formal teaching. From an indigenous learning perspective, teaching takes away some agency from the learner, so it is done very cautiously when needed and is regarded as an integral part of the knowledge conveyed; not as a separate mechanism for conveyance of information and knowledge (Margolin 2005). In these communities, learning happens regularly during daily activities, where teaching is embedded in its largest sense, not as a specific separate activity. Fathers and mothers teach through their own performance of activities and tasks, peers teach through collective activities, elders teach through storytelling, and nature teaches through its features, power and prowess.

Routes to indigenous learning

The routes of learning for indigenous people denote their distinctive ways of learning and describe how they learn, not what they learn. These are indigenous learning

systems (ILSs), peer learning, experiential learning (Rogers 2016) and the natural environment. These four routes to learning are provided in this paper as a frame of analysis and should not conceal the fluid nature of learning in these communities.

ILSs are the common culturally organised events and practices designed to help younger members of the community to learn. This entails conscious or semi-conscious learning, often intentional on the part of the provider, and includes elements such as rituals, clothing and stories. These systems draw upon kinship networks as well as family and household, teaching many things from household practices to environmental knowledge, and discussion of world and community events. While learning through ILS is mainly through elders, some learning occurs through friends and peers. Learning from experience is a route to learning that comprises much of what is learned in indigenous communities. It is experiential, unconscious, unintentional learning, creating tacit funds of knowledge and banks of skills. This learning experience is situated, socioculturally constructed and localised (Rogers 2016).

Why Bedouin women?

Focusing on Bedouin women reveals many realities that are relevant to their lives but may not be readily noticed due to the conservative nature of these communities. Women are important players in Bedouin communities (Abu-Lughod 1985, Briggs *et al.* 2003, Cole 2003, Bastawisi 2008, Ahmed 2010), and the significance of the role of women in these communities may be largely overlooked. Women's role in ensuring their community's sustainability is indispensable whether during times of stability or in times of change. As much as socialisation is considered a woman's role, she also steps out to assume a big role in mitigating and adapting to community level changes whether economic, environmental and cultural. These roles require learning starting from a very young age and this is continued throughout their lives, as their roles alter and expand to include new responsibilities, and as changes affect their communities.

In Bedouin communities, women develop their skills in anticipation of change in proactive, non-reactionary ways (Briggs *et al.* 2003). Coupled with their knowledge of their immediate environment, they play a significant role in sustaining the community in turbulent times and uncertain circumstances, when women exhibit flexibility and an ability to learn and cope with new situations; perhaps the most salient of which are economic and environmental changes. The balance between maintaining continuity and embracing change defines a main aspect of women's contribution to the sustainability of their communities

Relevant to women's roles is women's power (Bastawisi 2008) – the power that emanates not only from women's ties with and influence on family, relatives and extended circles of relationships in the community including in laws; but also from participation in activities that are considered to be a woman domain such as herding, and producing products, tools, utensils and means for storage of food stuffs. While not all of these activities, except herding, are direct livelihood activities, the ability of women to play these roles enables men to wander about in search of other livelihoods activities far away from home (Bastawisi 2008). Women's power in Bedouin communities is mostly covert, strongly affecting decisions that are apparently considered a male domain of

power like marriage decisions for girls in the family (Abu-Lughod 1993). Yet women exhibit the power of dissent and resistance in some communities through composing poems and songs in defiance of undesirable decisions or situations they cannot change (Abu-Lughod 1990, 1993).

Context and community

Al Qemam[2] is a small semi-settled community of Bedouins located in the south Sinai desert where they have lived for more than 1400 years (Bastawisi 2008, De Jong 2011). It consists of some 1500 families. While there are some modern features like a school and a health care facility, it is very traditional in its customs and practices. The main livelihoods activities of the inhabitants are horticulture, herding goats and sheep, tourist guiding for mountain climbing, trekking and selling locally made goods to tourists (Bastawisi 2008).

The patterns of learning for both men and women are closely linked to two main factors – the roles that they play in the community, and the changes which come about in the community through internal and external influences. While the need to learn varies in its particulars from child to adult learning, the general socio-cultural influences surrounding the learner have a large impact on what and how they learn. These influences propose a certain set of learnings that elders ensure that younger generations receive.

In this community, women are described as the keepers of old medicine, the original storytellers and the master herders. The main herbal healer, an elderly man who lives in the mountains near the village, claims that the basics for his healing skills were gleaned from older women healers in the tribe; on which he built his own knowledge and created new formulas. Women have historically provided support to their families in different ways including herding, orchard gardening and producing dairy products (Perevolotsky 1981, Bastawisi 2008). As changes occurred in the community, women embraced new learnings and activities. Women are prepared for engagement in these developing roles through life-long learning and from daily experiences.

Like most Bedouin communities, this community holds to an oral informal law which they describe as a comprehensive set of rules that governs everything in their lives, regulating rights, duties and disciplinary actions. This law mandates ways to judge wrongdoings and issue punishments for crimes including harassment of women, lying, stealing and cursing. It includes rules about passing through the lands of other tribes to the rights of every individual (human and non-human) in the tribe (Salem 2013).

The informal law secures each woman's right to voice opinions regarding matters that affect her or issues about which she is knowledgeable. Although learning as a requirement for girls is not mentioned in the informal law, a woman's right to voice an opinion reflects the girls' right to learn. This connects between voicing an opinion and the right to learn is obvious and necessary, according to the community members, since sound opinion entails knowledge and learning. Regarded as a responsibility, not a privilege, this right requires solid understanding of the community's norms, tradition

and culture which enables women the capability of giving sound advice and opinion. Girls learn the law in various ways as they go through different phases in their lives.

Patterns of learning

Since learning in indigenous communities is mostly a response to needs as they emerge, women and young girls are geared towards learning what helps them accomplish their basic roles in society. Girls' roles can be described according to the age: one to 8 years, 9 to 12 years, 13 years until marriage which can be around the age of 19 (Bastawisi 2008).

Maintaining the household

Household needs can be considered the most important of all needs in this as in all Bedouin communities. Women's informal learning is directly linked to these activities. Girls learn how to help with all the physical tasks related to the upkeep of the household unit as soon as they are old enough (Briggs *et al.* 2003).

In contrast with young boys, young girls (6–8 years) are given simple responsibilities at home like feeding chicken and collecting chicken eggs. Girls accept these tasks willingly and accomplish them even if they go to school (Bastawisi 2008). They learn these tasks both through direct instruction by the older females in the family and by observing and imitating their mothers and elder sisters. As they grow up, different tasks are increasingly delegated to them. This kind of learning reflects unconscious learning, as a young woman who collects herbs for income explains, '*Some things I learned alone, no one taught me. I just looked at how my mother did it*'.

Household duties extend beyond the basic chores of the domestic sphere to necessitate going outside. As girls grow older into the age group (9–12), herding becomes one of the main tasks, reflecting the family's trust in the girl's ability to walk far away from home. Herding is a woman's domain and is undertaken as a responsibility at the same time with herb collection (Bastawisi 2008), as well as fetching water.

Sustaining the norms and values of the community

In Bedouin communities, women are the guardians of social norms and morality; they are responsible for socialising children into Bedouin society (Abu-Lughod 1985) and for upholding tradition, values and customs. To be able to do this, they become well versed in the cultural norms, rules, ethics and the informal law and how to implement them.

In this community, women's gatherings are significant venues for early socialisation for boys and girls in the community. Women meet at each other's homes, bring their children with them and talk about various issues and happenings in the community. Girls and boys learn many of the values of the community from these gatherings. Men's gatherings are an important venue for socialisation for men, but they are not as inclusive as women's gatherings, young boys and girls are not allowed to attend men's gatherings (Bastawisi 2008). Moreover, socialisation means not only transmitting social

norms and values to the younger generation, but also sustaining and guarding the values of the community through the acknowledged right of women to voice their opinion on any issues occurring in the community. Women reach this level of authority by being prepared through the different phases of their lives through informal and experiential learning about the traditions, culture, values and customs of the community. Women have the power of discipline and correction in most cases. According to two older women who have grand-children, '*It is we who teach our children everything about our ways and values and the right ways to do things. Men engage in upbringing the children only when there is a huge problem and only when we bring it to their attention*'.

Contributing to household livelihoods

Women in Bedouin communities have a shared responsibility for making some financial contribution to the family, finding ways to improve existing livelihood practices and increasing access to economic opportunities, like participation in herding and cultivation as mentioned earlier. Women also contribute through non-monetary means through exchange of produce, eggs, fruits with others in the community, as well as exchanging services like knitting for others, caring for the sick or the children of other families as needed (Bastawisi 2008).

Contribution to family income can also be through their ability to collect medicinal plants and selling them to traditional healers in the community. The young woman who collects herbs for income explained how she uses the money she gets from collecting herbs to pay for her daughter's medicine and physiotherapy: '*I have collected herbs since I was young; this helps me now with treating my daughter. Every once in a while, I collect herbs, dry them and sell them to healers in the community. I also learned how to package them for the healers for selling. I make more money this way*'. An elderly female head of a family explained how her skills in collecting and drying herbs was one of the main sources of income that helped her raise her family of eight children: '*My husband died, and I had to raise my children and support my family. Collecting and drying herbs was a main source of income that helped me pull through this phase*'.

Currently, and since the booming of tourism, women and girls contribute to the income of the family through their skills in embroidery.

Creating and nurturing a family

The expected role of wife and mother is still the most revered for girls in this community. For this, she needs to learn certain skills: how to care for a home, carry out domestic chores and other activities mentioned above. Older women teach newly wedded brides everything about their new roles as brides and take a big role in maintaining good relationships and strong ties with the new family (Bastawisi 2008). Marriage responsibilities traditionally began with weaving a hair home to live in when married. Hair homes are made of long goat hair, woven into four or five carpet-like sheets that are then combined to form a tent. An important characteristic of these hair homes is that the animal hair does not allow rain to get inside the tent; raindrops run

over the hair outside, not inside the hair home. This responsibility is symbolic and requires about six months of hard work (Salem 2013).

Pathways to learning

Although girls in Bedouin communities were not historically engaged in formal education, they learned in a variety of ways. Ways of learning in this community reveal specific attributes that are markedly different from formal learning in schools, which may not be generalised across all indigenous communities.

Gatherings for oral story telling are one example of ILS and one of the most important ways of teaching values, norms, and identifying proper and improper behaviours, among other things, in traditional communities. Besides being a medium for learning through generations, storytelling was one way of teaching girls what their role is in their community, and what to expect their roles to be in future. Stories also teach about how things were different in the past.

Storytelling in this community is mostly carried out by older women and grandmothers who retell the stories to young girls and boys. Two women who never attended school remember what old gatherings were like: '*We used to gather around our great grandmother and listen to the tales. Many of them were scary as they told about ogres that ate young children and so on. But we learned that we do not go astray in certain places surrounding us*'. The lessons in the tales are so deep that they are still effective: '*Even when we got older we still fear the places where ogres can be according to the tales*'.

Bedouin tribes have different ways of teaching younger community members herding and shepherding. In this Bedouin community, the process of passing on the skills for herding is for younger girls (age 7–10 years) to accompany older girls (16–22 years). Herding is a non-ceremonial rite of passage for girls denoting transition to adulthood (Bastawisi 2008). Other Bedouin tribes have different ILS for herding, where older men in the community pass on relevant knowledge like the best places for the goats to graze, and the types and properties of the different plants in the area to the young (Ahmed 2010).

Herding also demonstrates peer learning. During herding trips, younger girls learn much from their older peers. They explore their surroundings and their place in it, they learn where to find the water, recognise and differentiate between the different herbs, and learn which herbs are found in which areas. They also experiment with herbs to find out their uses on their hair or skin. They learn participation, how to make choices and how to accept group decisions. In other words, they learn team work and a certain level of democracy. The girls sing along the way, play the flute which echoes through the hills, making it a happy activity which inspires even younger girls to want to join when they are older, they spend some time knitting, sewing and making embroidery while herding, they also drink tea and exchange stories as they sit around watching the goats wander about. Herds may range from 50 to 100 goats; girls learn how to count them to make sure none is lost. They give their goats names and train the goats to respond to them as they call out when they need to move to another spot or go home. Girls agree on the next day's spot by rotation, so that each of them gets to

choose for one day. The choice is respected by other girls; they all abide by the choice made (Bastawisi 2008).

El Naj is a seasonal activity that represents an ILS. It is basically a re-living of the old style of Bedouin life. It is a time when families from different tribes travel to places where herbs flourish because of relative abundance of rain and let their goats graze. Families spend time together, exchanging ideas and life experiences between the different groups. A young woman who goes with her family annually commented, '*El Naj is an old activity… we still do it to revive the old ways of living. If we do not do it and anything happens here to the water or the food we have, we will not be able to live. El Naj reminds us of how we used to live long time ago. We go and collect sticks for the fire and we make* farasheeh *(a kind of bread); we collect grass [for the animals to eat], we walk with the goats… we remember our old ways*'.

This activity also represents a form of peer learning. Women and girls benefit from these gatherings as they stay around the place where the tents are built, while men go hunting or trekking. During the *Naj* time, which can amount to four months, the women and girls mingle with others from other tribes and exchange their experiences and information. '*The young ones who did not experience this life we used to have learn from us how to live it, this is how they learn our old ways. If a girl's hand is not dry, she will not be able to pull out the grass from the land*', says a mother of three young girls who never went to school, reminiscing about older days when girls were strong and explaining that girls need to be strong and used to working to be able to do the things they need.

The natural environment is considered a learning source for this community located in a mountainous area. The continual mutual contact and impact results in a strong and direct relationship between desert women, the surrounding natural resources and environment. It is a historical relationship defined within the context of division of labour and gender roles (Bastawisi 2008). One woman who stopped going herding upon marriage and soon went back to herding afterwards explains what can be learned from mountains and the joy of herding, '*We learn patience from climbing the mountains around here. We know what patience is and we experience it as we climb the mountains and as we take the goats to graze. When you are half way climbing a mountain, you look up and realise you need to be patient and have will power and drive to complete your way up. Or when you go out with a herd and walk around until you find a good spot for them to eat. Then you move to another place after a while. Then you count them and call out for the ones who are missing. You find yourself talking to them. You spend a whole day with them. You learn a lot from them*'.

Climate change is learned through observing the surrounding environment. The elders in the community know that some plants have started to disappear due to the change of the weather and that the number of cats and foxes increased in relation to this disappearance. They recite the names of trees that were in the land a long time ago and describe how they were replaced with other trees over the years.

Learning from nature includes acknowledging the value of natural elements, like water. For a desert community like this one, water is precious. Gemeia, the youngest of three sisters explained why they care for the water they collect for the family: '*When you walk for hours to bring some water for your family, you are very careful not to waste*

it. You exert every effort to get each drop of water you use, you can't misuse it. Nature teaches us this'.

Learning from experience is embedded in most learning situations in this community. Much of the women's and girls' learning is experiential, unconscious learning, creating tacit funds of knowledge and banks of skills (Rogers 2016). They use trial and error experimentation to learn how to do new things or cope with new situations (Briggs *et al.* 2003). Children learn counting and many other things while herding livestock, entirely unintentionally - the smell, shape and behaviour of the sheep and goats. They also learn the shape, smell, touch and feel of herbs. From their engagement in household practices, they learn much from observation of others and practising domestic tasks. Working in the tourist market, women learn through observation and watching others, and through experimenting with new products. It is their experience that has enabled these women to understand the markets they deal with, to realise which items sell more quickly and which items are slow to sell. Om Youssef, who sells embroidered scarves, and who is one of the pioneers in the business commented while inspecting some of her scarves, '*People from England like these colours more than these*'.

The nature of learning in the community

The specific attributes of the nature of learning in this community are markedly different from formal learning in schools and may not be generalisable across all indigenous communities. These ways of learning reveal that learning is mutually reinforcing and holistic.

If we take *herding* in this Bedouin community as an example, we find that it is an activity taught by practice and accumulated *experience*; it is reinforced as an important task in the oral tales, part of the *ILS*, and through *peer learning* since elder girls teach it to younger ones. This kind of reinforcement helps inculcate, not only the activity, but the rules and values associated with it. It can also be argued that each of these ways of learning appeals to more than one sense which helps further inculcate it not only in the minds (reasoning) but also in the hearts (emotions) of the girls. Peer learning, for example, appeals to the feelings of community, the emotional bond that binds peers; the ILS appeal more to the reasoning, and experience appeals to the other senses like touch, smell, and sight. Indigenous learning is not solely cognitive, like memorising or rote learning; it is holistic.

Modern changes in the community

This community, like all communities, was subject to substantial changes that required adaptation. Accelerated change started as far back as 1967 with the advent of tourism (Hobbs and Tsunemi 2007, Gilbert 2013). Tourism resulted in increased settlement, which resulted in increased community services, the diffusion of new technology, and the introduction of formal schooling among other changes.

The booming and later decline of tourism affected the community deeply. The advent of new economic opportunities brings in its wakes several changes including

the abandonment of original livelihoods (Aikman 2002). Tourism left a deep mark on this community as its boom provided a lucrative economic opportunity markedly different from the prevalent traditional opportunities at the time. The drastic increase in the inflow of income from tourism resulted in the decline of nourishment of traditional ways of livelihoods like orchards and herding. Additionally, flourishing tourism resulted in a loss of interest in some of the local environmental knowledge relevant to everyday living as it seemed to be of limited use to younger generations at the time (Hobbs 2001). With the later decline of tourism, the ancestral knowledge relevant to orchard cultivation, herding and herbal healing seemed to regain prominence; albeit with a lag in knowledge and in practice.

Improving handicrafts for economic gain has been an important activity for girls and women in the community that started with tourism. Women in this community initially developed their skills in embroidery through informal learning but they were called upon to maximise these skills to be able to sell embroidered items to tourists who came to visit the area. Local initiatives were strengthened and broadened in scope by government and non-government organisations, local and international. This led to the emergence of local enterprises led by women in the community. Sabiha, for example, was trained through one of the development projects implemented in the community, after which she developed her own local enterprise. She got some 50 women together, out of the potentially productive 800 women in the community to help them capitalise on their authentic skills in embroidery to produce handmade products; she trains the women, who then train the girls, on improving and perfecting their sewing, finishing and other skills to ensure the quality of the products. She inspects the products and holds workshops where women who excel in a certain aspect of the work train others and help them understand faulty production and practise how to do it well. They make the products under her supervision and she sells them. '*Most girls learn, at some point in their lives, how to knit and use beads, etc. The quality of their work is not good for selling. They need to be trained for better finishing and quality*'. Sabiha commented.

Tourism provided the necessary conditions for settlement for this community: a stream of tourists and income (Perevolotsky *et al.* 1989). Life conditions after settling improved when new life support systems like electricity and readily available water started to be givens. Settlement, however, has affected the community in a way that is contrary to their original lifestyle. Herding in the same surrounding areas resulted in pressure on land use. Although vegetation was preserved to a certain extent owing to traditional practices (Hobbs *et al.* 1998, Gilbert 2013), while wildlife has been drastically affected (Hobbs *et al.* 1998).

Modern changes led to the abandonment of orchard gardening which used to be one of the major responsibilities of women in this community. Girls learned about cultivation through helping their mothers in the various chores of cultivation and caring for the orchards including watering, placing cloth bag-like fittings over grape vines, picking out wild grass and carrying it back to feed the sheep and goats, among others (Bastawisi 2008). This learning has gradually decreased as the interest in cultivation dwindled owing to the more immediate income from tourism about 60 years ago (Perevolotsky *et al.* 1989). Other abandoned tasks include cutting the wool of sheep

and spinning it into thread to knit woollen clothes for young children for the long and freezing winter. An elderly woman who did not send her daughters to school describes this activity: '*In my time, we used to learn how to spin using a wooden stick. Girls now do not learn this as before. Very few do*'. She asks her daughter to bring the wooden stick used as a spinning tool and demonstrates how she used to do it.

Technology has had a profound effect on the community. Television, for example, has largely replaced oral story telling as an amusing and educational pastime, and more importantly, as an enduring ILS that lasted for many years. It has also introduced the women and girls to new practices and new interests, for example, to new ways of dressing, Gemeia commented '*we started noticing and comparing what other girls are wearing and what we are wearing when we started to watch TV. We never compared before, we all dressed alike*'. Interestingly, although TV has diminished the value of oral tales in this community, television is not regarded as a good source of information: '*We call it* talaf el zouhoun*, not television*', commented one Bedouin father of three, with a play on words which literally mean destroying the brains, referring to the quality of the content of TV which is largely regarded as empty and lacking in purpose.

The effect of new technology and social media on girls is especially noted. Most women and girls have mobile phones, some of them smart phones. Through social media, users are given immediate and extensive access to information and borderless learning which is not place- or language-bound. Social media has also opened a non-traditional channel for connections outside the immediate community. The advent and expansion of social media has affected this community deeply in both negative and positive ways. Om Youssef commented, '*Young girls now can make [social media] accounts with fake names and know things that are inappropriate for them to know*'. Inappropriate in this context can refer to a wide range of learnings, including different ways of clothes, types of information and gender issues. Nonetheless, social media has also helped women and girls to get acquainted with styles of life around the world and learn useful things such as different ways of cooking, taking care of babies and children, and other maternal and family matters. It also helps with marketing needlework. The latter is seen as positive by the women in this community.

The paradox of formal education

The effect of formal education in this community gives mixed signals. Formal education is promoted as a development plan, as a safeguard from possible future risks. It is publicised as the guarantee that provides employment and secures girls' future more than the security provided by husbands and family. These ideas are not consistent with traditional ideas that promote the original roles and relationships of girls and women within the context of the community and its values. Hence, formal education divided the community: some view it as something to aspire for to the benefit of their children, convinced with the messages promoting its value; others view it as a threat.

With the introduction of formal schooling, the general understanding was that girls would not give up their original tasks and responsibilities to attend school, but women in particular viewed the hours spent in school as a threat since it would prevent their

girls from spending time herding, which would negatively affect their goats that are their biggest asset (Bastawisi 2008). The threat perspective seems to have materialised since formal schooling has affected some of the community's cultural and livelihood practices. It has affected the perceived importance and value bestowed to some aspects of informal learnings in the community. The changing patterns of herding is a case at hand where mothers currently do it rather than their daughters. '*Now older women and mothers go herding, young girls even when not in school, they stay at home and do the household duties and their school homework. My daughter is in school now, so I go herding instead*', commented Om Saleh during a herding trip. The diminishing interest in informal learning for girls is partly due to the lack of sufficient time to do both, while the belief that formal learning is more important in terms of providing more livelihoods opportunities in the future is very strong.

There is also an awareness of a gap of knowledge owing to the nature of the formal school provision available, a feeling that the formal schooling system is unable to provide many of the benefits that the informal systems of learning provide. The elderly woman who uses the wooden stick to spin explained that, although she used to regret that she could not afford to send her girls to school, '*I realised that what "life" taught them exceeded what I see other girls learned in school*'. And as one of the mothers who went back to herding because her daughter goes to school commented, while she used to view school as more important than herding, regrets that much was lost by attending school: '*Now I do it instead of my daughter, but when she grows up and has her own daughters, she will not be able to do it. She will not know how*'.

Meanwhile, the community's experience with formal schooling did not deliver the anticipated results, leaving some community members feeling that its promises were not delivered. OmYoussr, who pursues handicraft activities, commented on her experience with formal education, saying, '*I studied all the way up to* Thanaweya Amma *[the examination for the national General Secondary Education Certificate] and I got very high grades. I could not go to University because it was not appropriate in my time to travel and live alone. But my younger sister did. She delayed getting married. She now has a higher degree. What is the use of a higher degree when there are no jobs here?*'

Learning and sustainability

Learning is an omnipresent feature and function of life. The intricate linkage between knowledge, learning and community needs is key for survival in indigenous communities. This necessitates questioning aspects and functions of learning in these communities: Does formal learning and the kind of knowledge it conveys contribute to the sustainability of these communities or accentuate their dependency? What functions does indigenous learning serve for the community and what is being lost to adopting formal ways of learning? Can formal learning and indigenous ways of knowing be reconciled for the ultimate benefit of indigenous communities? These questions are very pertinent ones when discussing the impact of learning and the long term effect of education in indigenous communities.

The relevance of education

The prevalent discrepancy between the kind of education provided in schools and the actual needs of specific local communities is at the core of the question of sustainability. The prevalent Western educational paradigm is detached from the intrinsic cultural identities, the immediate environment, the needs and specific aspirations of indigenous communities everywhere. The relationship – or rather, the disconnect – between education and livelihoods is a serious concern that must be addressed in the context of sustainability. This constitutes an even more pressing concern for indigenous communities where knowledge and livelihoods that have historically supported these communities are eroded due to the infiltration of modernity, with its lures and its acclaimed benefits.

In this community, formal education did not create jobs but affected the practice of traditional livelihoods negatively. Herding, as discussed in this paper, is an example of a traditional livelihood activity that is being gradually abandoned by girls despite being acknowledged as important by community members. This situation creates a livelihoods gap where old activities are eroded, and new ones are not created, which begs the question whether formal schooling can support the learning of traditional livelihood activities, through inclusion into curricula. Meanwhile, the fact that the knowledge associated with herding cannot be sustained in isolation from its practice as part of daily life should be stressed.

Moreover, since women's learning is closely related to their roles in the community, where women undertake many responsibilities and fulfil many duties, it is important to highlight the diversity of knowledge needed by Bedouin women compared to the standardised pattern and system of formal education. The direct relevance and immediacy of what women learn is important; women learn what is directly relevant to their lives, to their place and to their community. They implement what they learn immediately. The feeling of self-worth in this case is different from the feeling of self-worth that is inherent in formal education. The former relates to the level of engagement of women in their community, the latter seems to relate more to becoming a bystander, an onlooker, who awaits a future formal job that is distant from the community's daily needs and activities, hence alienating women. This alienating role of formal education can have a distancing effect on educated women in these communities.

Relevance also relates to how formal education can bear discriminately on girls when access to formal schools require travel or being away from home for extended periods of time, in which case boys will have better chances. Meanwhile, indigenous learning can also be criticised for confining girls and women to roles that are predetermined by the community. Striking a balance that ensures both individual and community needs would be the optimal learning situation.

Informal, formal and beyond

Finding ways whereby informal and formal ways of learning can be mutually beneficial and capitalised on is a difficult task. Ideas include finding ways to make formal learning more relevant to the learner's life as in informal learning, helping learners recognise the unconscious learning in informal learning for scrutiny and evaluation, and helping

people unlearn what have been learnt informally if deemed harmful (Rogers 2014). Other ideas stem from further understanding of how informal ways of learning affect learners' minds and finding ways that can enhance formal teaching. It is proposed that indigenous languages and cultures makes adapting to modern learning like mathematics, for example, difficult. Deeply embedded native meanings, language and vocabulary make it hard to understand the unfamiliar, like mathematical equations (Barton and Frank 2001). Other ideas include ways to include indigenous knowledge into large scale development plans and informal learning settings (May and Aikman 2003).

Learning, creativity and diversity

When learning is packaged as a standardised form that treats all learners as equals, how does this contribute to individual growth or change in a creative way? Or to allow diversity?

Creativity is a given mode of problem solving, an innate ability to adapt, change, transform and survive. Creativity is developed through successive trials at discovering new things, without fear of making mistakes and is undertaken with wholehearted interest. Learning in schools aims at accumulating knowledge that is learnt by repetition which hampers creativity and diminishes originality (Bohm 1996, Csikszentmihalyi 1996). Creativity is acquired through training of the mind to seek newness and originality. A creative state of mind is hence more relevant to the indigenous ways of learning since dealing with emerging needs and the tendency to improvise while attempting to respond to these needs can be viewed as giving recurrent possibilities for creativity. However, even indigenous patterns of learning can also hamper creativity if excessive control and restriction of exploration is pursued and too much conformity is enacted.

Meanwhile, the part played by formal schooling in the growth and development of the individual would seem to be at odds with creativity, diversity and life-long learning as main principles of sustainability. While learning is considered a main contributor to change and growth at the personal level and while each person lives her entire life constructing a universe of meaning and making sense of herself and her world (Jarvis 2004), formal education, as a standardised form of learning, contributes to developing a sense of self that is not entirely accommodative of personal differences. Modern education plays a significant role in limiting variety and decreasing diversity.

Conclusion

Indigenous learning is diverse and takes many different shapes and forms. This paper only scratches the surface of ways of learning that have beneficially served indigenous communities and sustained them for many years. Valuing indigenous ways of learning is increasingly becoming a necessity as it could mean the only tested and tried means for sustainability for communities that have thrived using this knowledge for many generations. There must be ways whereby the ultimate learning situation can be sought, one that fosters their ability to engage in their community, preserving the community's

identity, while allowing for new ideas and learnings to enhance creativity and experimentation.

This study of learning among a group of indigenous Bedouin women and girls shows that, instead of being seen as poor, weak and limited in roles, many of these women have a good deal of power and scope for decision-making. They play a large part in indigenous learning and have considerable control over the tools for learning. They are innovative and capable of adapting to new situations. But their informal learning patterns would seem to be under threat from the more formal education of schools. There are indications that some basic indigenous activities are being increasingly abandoned by girls and young women. Besides reflecting a loss in an authentic ILS, thiks abandonment creates generations of younger women not fully adept at a main livelihood activity that has historically supported this community and sustained its livelihoods.

Notes

1. This article is focussed on learning of Bedouin women. It does not discuss the details on gendered differences in men's and women's learning and lives.
2. All names are pseudonyms.

Acknowledgments

The author would like to acknowledge the support of Dr Alan Rogers in the conceptualisation of this paper.

Disclosure statement

No potential conflict of interest was reported by the author.

ORCID

Abeer Salem http://orcid.org/0000-0001-9231-9497

References

Abu-Lughod, L., 1985. A community of secrets: the separate world of Bedouin women. *Signs: Journal of women in culture and society*, 10(4), 637–657.

Abu-Lughod, L., 1993. *Writing women's worlds: Bedouin stories*. LA: University of California Press.

Abu-Lughod, L., 1990. The romance of resistance: tracing transformations of power through Bedouin women. *American ethnologist*, 17(1), 41–55.

Ahmed, M.T., 2010. *Ecosystems and human well-being: El Maghara, Northern Sinai, Egypt*. United Nations Environment Program. Nairobi: Earthprint.

Aikman, S., 2011. Educational and indigenous justice in Africa. *International journal of educational development*, 31(1), 15–22.

Aikman, S., 2002. Women's oral knowledge and the poverty of formal education in the SE Peruvian Amazon. *Gender & development*, 10(3), 41–50.

Bandura, A., 1971. *Social learning theory*. NY: General learning Press.

Barton, B. and Frank, R., 2001. Mathematical ideas and indigenous languages. *Sociocultural research on mathematics education: an international perspective.* Mahwah, NJ: Lawrence Erlbaum Associates, 135–140, 135–149.

Bastawisi, I., 2008. Women in desert communities: women of the Jebaleya tribe. *Studies in folkloric arts*, Vol. 16. Cairo, Egypt: Ministry of Culture.

Birch, I., *et al.*, 2010. *Towards education for Nomads: community perspectives in Kenya.* London. UK: International Institute for Environment and Development.

Bohm, D., 1996. *On creativity*. NY: Routledge.

Breidlid, A., 2009. Culture, indigenous knowledge systems and sustainable development: a critical view of education in an African context. *International journal of educational development*, 29(2), 140–148.

Briggs, J., *et al.*, 2003. Changing women's roles, changing environmental knowledges: evidence from Upper Egypt. *The geographical journal*, 169(4), 313–325.

Cajete, G.A., 2004. A Pueblo story for transformation. *In*: Edmund O'Sullivan and Marilyn Taylor, eds. *Learning toward an ecological consciousness: selected transformative practice.* New York (NY): Palgrave Macmillan, 103–113.

Csikszentmihalyi, M., 1996. *Creativity: flow and the psychology of discovery and invention.* NY: Harper Perennial.

Cole, D.P., 2003. Where have the Bedouin gone?. *Anthropological quarterly*, 76(2), 235–267.

Darko, I.N., 2014. Environmental stewardship and indigenous education in Africa: looking beyond euro-centric dominated curricula. *Emerging perspectives on 'African development': speaking differently*. New York, NY: Peter Lang.

De Jong, R. E., 2011. A grammar of the Bedouin dialects of central and southern Sinai. *Handbook of oriental studies. The Near and Middle East.* Leiden, the Netherlands: Koninklijke Brill NV.

Gilbert, H., 2013. Bedouin overgrazing' and conservation politics: challenging ideas of pastoral destruction in South Sinai. *Biological conservation*, 160, 59–69.

Higgs, P., 2012. African philosophy and the decolonisation of education in Africa: some critical reflections. *Educational philosophy and theory*, 44(2), 37–55.

Hobbs, J. and Tsunemi, F., 2007. Soft sedentarization: Bedouin tourist stations as a response to drought in Egypt's Eastern Desert. *Human ecology*, 35(2), 209–222. Retrieved from http://www.jstor.org/stable/27654182

Hobbs, J., Grainger, J., and El-Bastawisi, I., 1998. Inception of the Bedouin Support Programme in the St. Katherine Natural Protectorate, Sinai, Egypt. *Mountain research and development*, 18(3), 235–248.

Hobbs, J., 2001. Exploration and discovery with the Bedouin of Egypt. *Geographical review*, 91(1/2), 285–294.

Hoppers, W., 2000. Nonformal education, distance education and the restructuring of schooling: Challenges for a new basic education policy. *International review of education/ Internationale Zeitschrift fr Erziehungswissenschaft/ Revue Inter*, 46(1/2), 5–30.

Jarvis, P., 2004. *Adult education and lifelong learning: theory and practice.* NY: Routledge.

Knowles, M., Holton, E., and Swanson, R., 2005. *The adult learner: the definitive classic in adult education and human resource development*. USA: Elsevier.

Kolb, D. A., 1984. *Experiential learning: experience as the source of learning and development*. Englewood Cliffs, NJ: Prentice-Hall.

Krätli, S., 2001. *Education provision to nomadic pastoralists: a literature review*. UK: Institute of Development Studies.

Margolin, M., 2005. Indian pedagogy: a look at traditional California Indian teaching techniques. *In*: M. Stone and Z. Barlow, eds. *Ecological literacy: educating our children for a sustainable world*. San Francisco, CA: Sierra Club Books, 67–79.

May, S. and Aikman, S., 2003. Indigenous education: addressing current issues and developments. *Comparative education*, 39(2), 139–145.

Nyamnjoh, F.B., 2004. A relevant education for African development-some epistemological considerations. *Africa development. Senegal, CODESRIA*, 29(1), 161–184.

Nsamenang, A. B., 2005. *The intersection of traditional African education with school learning. In*: L. Swartz, C. De la Rey, and N. Duncan, eds. *Psychology: an introduction*. Cape Town, South Africa: Oxford University Press, 327–337.

Nsamenang, A. B. and Tchombe, T. M., 2011. Handbook of African educational theories and practices. A generative teacher education curriculum. Bamenda, Cameroon: Presses Universitaires dAfrique.

O'Sullivan, E. and Taylor, M.M., 2004. *Learning toward an ecological consciousness: selected transformative practices*. NY: Palgrave Macmillan.

Perevolotsky, A., 1981. Orchard agriculture in the high mountain region of Southern Sinai. *Human ecology*, 9(3), 331–357.

Perevolotsky, A., Perevolotsky, A., and Noy-Meir, I., 1989. Environmental adaptation and economic change in a pastoral mountain society: the case of the Jabaliyah Bedouin of the Mt. Sinai region. *Mountain research and development*, 9(2), 153–164.

Rivière, F., ed. 2009. *Investing in cultural diversity and intercultural dialogue*. Vol. 2. Paris, France: UNESCO.

Rogers, A., 2014. *The base of the Iceberg: informal learning and its impact on formal and non-formal learning. In*: Regina Egetenmeyer, ed. Study guides in adult education. Opladen, Germany: Barbara Budrdich Publishers

Rogers, A., 2016. Learning and indigenous peoples, unpublished paper presented at workshop on indigenous learning. December 2016. http://totald.org.uk/images/downloads/LEARNING%20AND%20INDIGENOUS%20PEOPLES%20draft%20(002).pdf

Rogoff, B., Najafi, B., and Mejía-Arauz, R., 2014. Constellations of cultural practices across generations: indigenous American heritage and learning by observing and pitching. *Human development*, 57(2–3), 82–95.

Salem, A., 2013. *Negotiating sustainability: reclaiming ecological pathways to bio-cultural regeneration in Egypt*. Dissertation (PhD). Prescott College for the Liberal Arts, the Environment and Social Justice. ProQuest Dissertations Publishing.

Semali, L.M., 2002. Community as classroom: (re)valuing indigenous literacy. *In*: L.M. Semali and J.L. Kincheloe, eds. *What is indigenous knowledge? Voices from the academy*. NY: Routledge.

Shizha, E., 2010. The interface of neoliberal globalization, science education and indigenous African knowledges in Africa. *Journal of alternative perspectives in the social sciences*, 2(1), 27–58.

Sterling, S., 2001. *Sustainable education: revisioning learning and change*. 1st ed. Devon, UK: Green Books Ltd.

Suliman, M., Shah, M., and Ullah, I., 2017. Addressing the issue of nomadic communities children educational exclusion through mobile tent schools in Malakand, Pakistan. *Imperial journal of interdisciplinary research (IJIR)*, 3(3), 540–546.

Tedla, E., 1992. Indigenous African education as a means for understanding the fullness of life: Amara traditional education. *Journal of black studies*, 23(1), 7–26.

Venter, E., 2004. The notion of ubuntu and communalism in African educational discourse. *Studies in philosophy and education*, 23(2/3), 149–160.