



Sustainable Development in
Vocational Education and Training

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Finding ways to embed sustainable development into vocational education and training in the built environment

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For the last 30 years, I've watched as our Vocational Education and Training system has developed. The most fundamental changes have been the adoption of a standards defined system, the transfer to industry of the responsibility for defining the standards on which our qualifications are based, the national nature of the system and the massively wider range of industry and skills sectors covered by the standards and qualifications

As our understanding of the skills and training needs of the country has developed, it is becoming increasingly clear that skills, industry, and training constitute not discrete elements but a complex interwoven whole that intersects with social and environmental as well as economic realities. In such a circumstance, it's clear that we need to adjust our thinking accordingly.

In centering sustainable development goals, we at Artibus Innovation intend to have a positive impact on the concept and development of the built environment in Australia. Better practices in our built environment offers the opportunity not just to improve lives economically, socially, and environmentally, but can also improve productivity (including labour productivity and resource productivity), efficiency throughout the production and distribution chain, and on expanding customer bases. These kinds of actions within the built environment will also support the rapid and sustainable reduction of greenhouse gas emissions.

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Artibus Innovation is one of the six skills service organisations (SSOs) in Australia, approved by the Commonwealth Government to help industry to look after the vocational education and training (VET) standards, and we cover the construction and property services sectors. We collectively call these sectors the built environment, and they cover everything from building design, through the construction process to demolition and waste management. Training for the built environment covers approximately half a million businesses, some two million employees, and accounts for about a quarter a million VET students per year.

Over the last four years we have supported our Industry Reference Committees (IRCs) to redevelop the competencies and qualifications covering these industries and through that time we've noticed a commitment by many industry representatives to both innovation and sustainability.



Executive Summary

The focus on sustainable development is intensifying across the globe, in industry and society. Sustainable development has implications in all areas of social and economic development and presents a significant opportunity for the vocational education and training systems. Work has been done in identifying how to incorporate sustainability into some qualifications in the VET system, but this has not yet occurred at a systemic level. Sustainability, as an objective, has always been present within education but its recognition and articulation has advanced significantly as a result of the United Nations sustainable development goals (SDGs). Due to its broad applicability to the Australian workforce, VET is ideally placed to incorporate sustainable development principles and practices in an effective, efficient and enduring manner.

Over the last six months we've been exploring the applicability of United Nations sustainable development goals (SDGs) to the built environment. This is particularly necessary, as:

- The built environment accounts for 22% of the world's sustainability problems¹
- The World Economic forum (2019) notes that awareness of the UN SDGs in Australia is on par with the European countries of Holland and Germany.

Key points:

- There is a business return on investment from achieving SDGs
- Sustainable development has many aspects - it's not just environmental, but also social, economic, etc.
- Sustainable development is coming - Australia is a signatory to the UN SDGs
- Industry and government need to consider how to achieve SDG's both generally and in the workforce setting. Challenges need to be met by both industry and government.
- The VET system has clearly identifiable elements that can support achieving SDG's

Artibus Innovation is committed to sustainable development in the workforce of the built environment. We have been sponsoring co-design workshops with industry peak bodies from the property services sector as part of our Industry Skills Forecast activity. What we have discovered so far is that there is an appetite for this discussion and that education has a huge part to play.

What are the UN SDGs?

The United Nations Sustainable Development Goals (SDGs) are a set of 17 globally agreed goals which nations will work towards achieving by 2030. The intention of the goals is to guide and accelerate progress on social, economic, cultural, and environmental development. The goals are not prescriptive about how they are achieved. Rather they seek to orient governments to action and report national progress. But it is not wholly up to government. The goals provide the framework to engage changemakers in government, business, community and individuals to create and accelerate actions for global and national sustainable development.



The Australian federal government has committed to the UN's Sustainable Development Goals. As reported by the Green Building Council Australia in *Transforming Australia: SDG Progress Report*, Australia's early progress towards the goals is mixed:

- Australian progress across all goals is on average 6.5/10, and towards SDG11 is 6.3/10
- Australia is ranked 37th in the world, and
- 60% of the Australian population is unfamiliar with the UN SDGs compared to the global average of 42%.²

What does 'sustainable development' mean?

The concept of 'sustainable development' has a particular meaning and history in the context of the United Nations:

Sustainable development is "development that meets the needs of the present without compromising the ability of future generations to meet their own needs."³

The goals are an "integrated, equilibrium paradigm".⁴ Within this paradigm, the development of society, environment, culture, and economy are seen as equally important, inherently intertwined, and interdependent. For instance, economic progress does not occur separately to social progress. Consequently, the SDGs seek to integrate a broad range of issues, such as safe infrastructure, accessible housing, human rights, and economic development, rather than focusing exclusively on either economy or the sustainability of the environment as separate issues.⁵

Our interest in the built environment directly corresponds with nine UN SDGs, of which seven have direct implications for skills. These are illustrated by the World Green Building Council below:



How are Australia's businesses responding to the SDGs?

Research by RMIT on the ASX150 listed companies has found increasing awareness and commitment to the SDGs, visible through integration into business strategies and mentions in CEO/Chair reports, for instance. The Top 20 companies report against both the SDGs (68%) and the Global Reporting Initiative (90%).

Australia's progress on the SDGs is expected to have long-term implications for industry, business and employers, including attracting institutional investors and the financial services industry who are already seeking to reduce their climate-related prudential risks.⁶ The ANZ Bank has taken the lead on SDGs by being the first Australian bank to develop a Sustainable Development Goal Bond, which follows the maturing of their 2015 Green Fund Bond:

"The transaction uses our SDG Bond Framework which links our asset base to certain United Nations' Sustainable Development Goals, giving our investors a unique opportunity to drive positive environmental, social and sustainability outcomes while earning an attractive rate of return".⁷

With leading Australian investors and companies already on advanced SDG pathways, what are the broader industry needs to support engagement and progress towards sustainable development?

There are potential business opportunities to be claimed by those industry and employers who lead the shift towards the sustainable development paradigm, including key opportunities summarised below:

<p>A strong demonstrated business case of implementing SDGs</p>	<p>The Impact ROI Project has found that corporate responsibility and sustainability can reduce company turnover rate by up to 50%, increase employee productivity by up to 13%, and increase employee engagement by up to 4%.⁸</p> <p>According to The Business Case for Purpose (EY 2016), "58% of companies that prioritised purpose achieved 10% or more revenue growth over 10 years."⁹</p> <p>KPMG found that 8% of the world's largest 250 companies demonstrate a business case for implementing the SDGs.¹⁰</p>
<p>New Market Opportunities</p>	<p>"Achieving the SDGs is estimated to unlock \$12 trillion in new market opportunities by 2030 (Business Commission for Sustainable Development)."¹¹</p>
<p>Tender and procurement</p>	<p>"Procurement in Australia is estimated to be worth \$600 billion, and social procurement (choosing to purchase a social outcome when buying goods or services) is rapidly on the rise."¹²</p> <p>The Victorian Government has a social procurement framework, which is particularly relevant to Built Environment industries and employers.¹³</p>
<p>Attracting new investors and audiences</p>	<p>There are expectations that investors will require transparent reporting of environmental and social risks.¹⁴</p> <p>79% of millennials expect companies to improve their performance on social progress. 87% of consumers will buy based on values, and 76% will boycott a company that supports issues contrary to their beliefs.¹⁵</p>
<p>Resource savings & increased profit</p>	<p>Globally, the SDG resource savings "from reduced carbon emissions, water use and other resource consumption, the overall profit could be as high as \$17 trillion."¹⁶</p>
<p>Creating new, innovative, and effective partnerships</p>	<p>Understanding the negative and positive impact of industry and business on the wider world can lead to more conscious leadership, collaboration, and innovative solutions.</p> <p>'It [is] crystal clear that, in order to achieve the SDGs and grasp the financial prize, "business leaders need to strike out in new directions to embrace more sustainable and inclusive economic models." Business as usual is not an option.¹⁷</p>

It's clear that doing business for good is good for business

The role of society

Since sustainable development involves and requires fundamental societal transformations, it can only result from a process of societal learning.¹⁸

Society provides the broad context within which industry and organisations operate, including granting businesses the 'social licence' to continue to operate. 'Built-in' sustainable development education through all education systems can support the public to be conversant in SDG principles and practices through learning key knowledge, ideas and concepts. To some extent this is already offered through the primary and secondary schooling systems.¹⁹

However, this baseline knowledge is unlikely to provide the precise levers for systemic change required by industry and businesses. This is because individuals can know what ought to change but not have the authority or influence to act as changemakers. For instance, in the VET sector, apprentices are indentured labourers, and as such are unlikely to have the authority or influence over their employers to bring about cultural change to the way things have always been done.

Social sentiment can be inconsistent or subject to sudden political changes. There may also be a lack of consensus on the need for and speed of change. However, it is in the interests of industry and organisations to lead change, rather than wait for it to be imposed by external factors, politics, or challenges to industry's 'social licence' to operate.

Sustainable businesses need leaders who are pro-actively aware of their social and environmental responsibilities as well as their financial ones.²⁰

The role of industry

"Much more clarity is needed on how organizations must change to meet the sustainability challenge, and how the necessary changes may be achieved," write Millar, Hind and Magala in the *Journal of Organisational Change Management*.²¹ In summarising the findings from the relevant literature, they contend that the 'practitioner body' must be engaged on sustainability issues to move the business agenda forward.

Engaging this body of practitioners, particularly those who are active members of industry associations and with a high level of interest in where their industry and professional field is heading, is expected to have stronger outcomes than educating the general population. These individuals can act as change leaders or agents by using their professional roles and affiliations to influence new ways of thinking and behaving, and exert influence both upwards and downwards within the organisation.

Within the various sectors of the built environment, there is already acknowledgement of the need to address issues around sustainable development and action is already taking place. Within the specific context of sustainability, PICAC, the Plumbing Industry Climate Action Centre, stands as an excellent example of Industry leadership in the area. PICAC is the result of a partnership between a number of Industry associations and promotes training in sustainable plumbing in Australia.

PICAC was formed in 2009 at the height of the millennium drought in Australia. The first PICAC training facility opened in Brunswick, Victoria in April 2009, with the primary purpose to provide courses in Green Plumbing, in order to address the skills shortage in sustainable plumbing within the industry at the time.²²





The role of education

In the 2017 UNESCO report, *Education for Sustainable Development Goals*, Rieckmann contends that education is a key instrument for achieving the United Nation's sustainable development goals. He conceptualises the goals as significant and far-reaching:

The universal, transformational and inclusive SDGs describe major development challenges for humanity... The goals cover global challenges that are crucial for the survival of humanity. They set environmental limits and set critical thresholds for the use of natural resources... The SDGs address key systemic barriers to sustainable development such as inequality, unsustainable consumption patterns, weak institutional capacity and environmental degradation.²³

While the UN is not prescriptive about how the SDGs are achieved, the UNESCO report offers a guide for developing educational responses to the SDG 2030 Agenda. It makes the point that “not all kinds of education support sustainable development”, particularly if it promotes economic growth exclusively. Existing training may have economic growth assumptions tacitly embedded within them.

The Australian Education for Sustainability (ES) approach overlaps with, but is less comprehensive than UNESCO's advocacy of Education for Sustainable Development (ESD). See pg 14 for details. Vocational education and training is notably missing from the Education for Sustainability initiatives.

Education for the SDGs will require integrating key sustainable development issues into teaching and learning. This may include, for example, instruction about:

- climate change,
- disaster risk reduction,
- biodiversity,
- poverty reduction, and
- sustainable consumption.

It also requires participatory teaching and learning methods that motivate and empower learners to change their behaviours and take action for sustainable development. ESD consequently promotes competencies like critical thinking, imagining future scenarios and making decisions in a collaborative way.

Education for Sustainable Development (ESD) is described as the most appropriate way to empower learners to develop competencies relevant to each of the 17 goals:

What ESD requires is a shift from teaching to learning. It asks for an action-oriented, transformative pedagogy, which supports self-directed learning, participation and collaboration, problem-orientation, inter- and transdisciplinarity and the linking of formal and informal learning. Only such pedagogical approaches make possible the development of the key competencies needed for promoting sustainable development.²⁴

The UNESCO report describes how ESD education can support achieving the SDGs, including advice and resource for curriculum developers in relation to key competencies for each of the 17 SDGs. It proposed that all training should address three learning domains for each SDG: cognitive, socio-emotional, and behavioural. These domains provide the structure and focus for five learning objectives. These objectives involve abstract and applied learning found in VET training and have similar intent as the Australian VET system's foundation skills. An example for SDG11 Sustainable cities and communities is provided in the appendix.

As an example of how a unit of competency can articulate to an SDG outcome, take the unit of competency **CPPHES4009 Promote the adoption of home sustainability practices**. This unit of competency speaks directly to **Goal 11: Make cities and human settlements inclusive, safe, resilient and sustainable**.

In CPPHES4009, learners are expected to assess the readiness of residents to adopt home sustainability practices, to develop an implementation plan, and provide follow up services.

These competencies map to SDG targets

- **11.1:** By 2030, ensure access for all to adequate, safe and affordable housing and basic services and upgrade slums),
- **11.3:** By 2030, enhance inclusive and sustainable urbanisation and capacity for participatory, integrated and sustainable human settlement planning and management in all countries),
- **11.6:** By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management), and
- **11b:** By 2020, substantially increase the number of cities and human settlements adopting and implementing integrated policies and plans towards inclusion, resource efficiency, mitigation and adaptation to climate change, resilience to disasters, and develop and implement, in line with the Sendai Framework for Disaster Risk Reduction 2015–2030, holistic disaster risk management at all levels.²⁵

While SDGs have not previously been integrated into national vocational education and training directly, there is certainly precedent for this type of approach. Safety, for instance, is embedded in most units of competency, in addition to safety-specific training. Such treatment underscores its importance and necessary presence across all competencies. The SDGs share a similar fundamental importance, and recognition of the need to meet these goals across all national training would be a powerful acknowledgement of their significance.

Embedding Sustainability into VET

Two recent activities focusing on sustainability in the VET training package content are noteworthy. These are:

1. Sustainability Industry Reference Committee's 2019 Skills Forecast, delivered under the MSS – Sustainability Training Package

Sustainability is a term that is used broadly. The Sustainability Industry Reference Committee acknowledges that sustainability does not have a discrete occupational outcome. Despite this, their approach is chiefly about business and manufacturing, oriented to responsive practices that make industry and business economically and environmentally sustainable, such as by adopting new technologies, reducing energy waste, and being responsive to new economic challenges and opportunities like the circular economy. The term sustainability in this definition covers:

“cross industry business and environmental practices, aimed at improving the long-term viability of businesses... Sustainability aims to benefit businesses and the environment by improving productivity and efficiency through embedding sustainable operations, environmental monitoring and technology, and competitive systems and practices.”²⁶

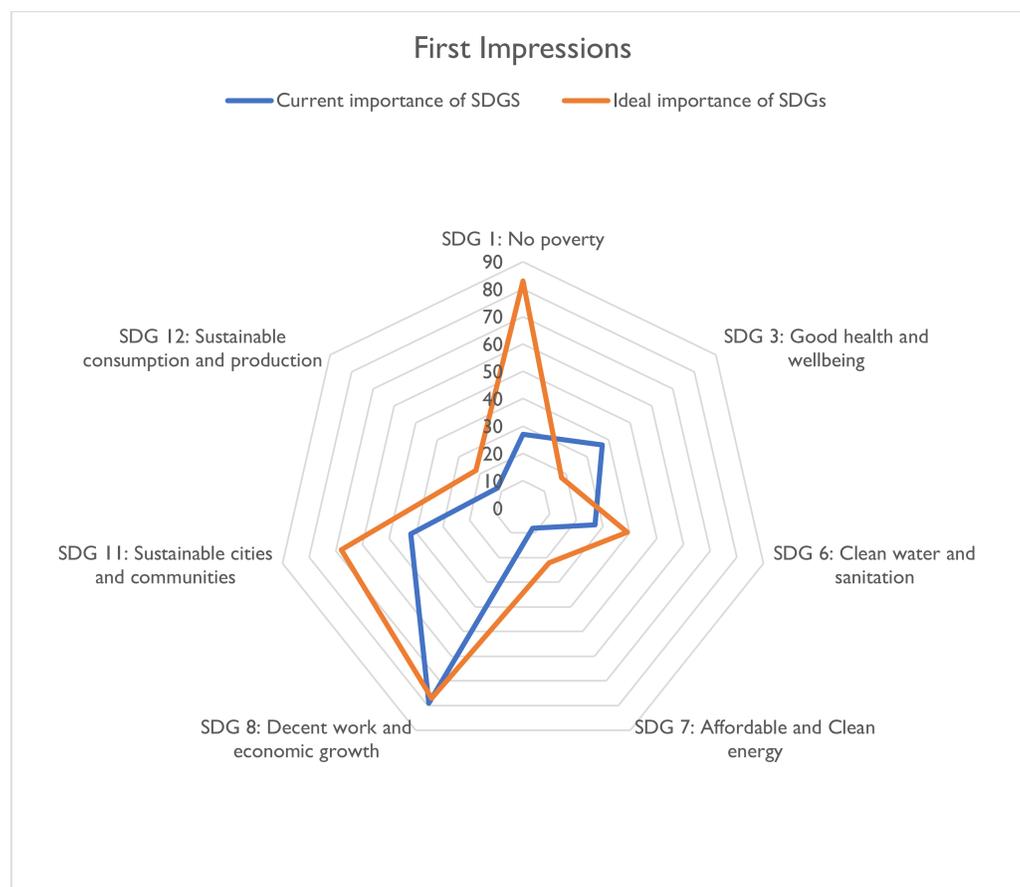
2. Environmental Sustainability Expert Panel Advice to the Australian Industry and Skills Committee (November 2019), delivered by Skills Impact.

The Environmental Sustainability Expert Panel was a review of the content of environmental sustainability units across all training packages, with the objective of considering options for addressing environmental sustainability through the VET system. Environmental sustainability here is seen as an issue that will impact all industry and business through their corporate governance responsibilities. VET is seen as having a significant role to play in meeting new workforce requirements as environmental sustainability gradually impacts more occupations.

Using an algorithm tool, the Environmental Sustainability Expert Panel identified and compared existing VET sustainability units that are potentially generic in nature. The keywords used to guide these searches were principally related to environmental and physical resources, including water, carbon, energy, waste.

The focus on environmental sustainability is applauded but misses the real issue which is about practices and processes across supply chains. This reflects the nature of industry, the regulatory drivers it responds to, and the skills gaps expected to emerge. The design of the Australian VET system is built around practices and processes with its descriptions of knowledge and performance.

A co-design process undertaken with a range of members of the Property Services Industry Reference Committee identified that there are seven SDGs that are seen as directly relevant to skills within the built environment,²⁷ as shown in the radar chart below. During the co-design process participants were asked to rate how important each sustainable development issue was to their sector. This was then compared to where they would ideally like to see their sectors positioned in the future. What is clear from this exercise is that industry has a strong appetite for change.



Realigning the VET system to sustainable goals is a challenge that is achievable. We have investigated the feasibility of mapping the outcomes and processes described in training components to the SDG indicators with direct relevance to the built environment. We have found clear opportunities for units of competency to guide benchmarking and measurement of performance against SDG indicators.

Progression of this work would provide workers with the competencies to:

- enhance supply chain collaboration and partnerships through common concepts and skills
- provide skills and competencies to work across industry silos
- support innovation linked to Australia's progress towards achieving the SDGs
- provides workforce benchmarks and target setting capability that can be applied by associations and industry to enhance sustainable development outcomes as well as skilling outcomes

Current VET approaches to sustainability and environmental sustainability cover multiple pedagogies and this suggests some support for using the VET system to deliver SDG competency outcomes for industry. At this point, there are several questions about the best methodology for moving forward:

- Should the VET system embed specific knowledge and skills for SDG and ESD competencies? OR
- Are the SDG competencies present in VET, but unrecognised, within existing units and qualifications? OR
- Can the SDG competencies be achieved through the repackaging and delivery of existing units, skills sets, and qualifications?

What needs to happen next?

Sustainable development requires society, industry and government to work together. While we're very much in the exploratory stage in our research into SDGs, it's becoming clear that industry is keen to get on board with improving sustainable development outcomes. An immediate action is to facilitate the engagement of the Industry Reference Committees on this journey.

Having signed up to the SDG goals, the challenge for the Government is how best to lead the entire vocational education and training ecosystem in integrating them. Initially this will require amendment of training package development policy to mandate connections with SDG reporting outcomes. Beyond this, there is much more to be done and consideration will likely include:

- Considering how SDG competencies could be introduced into the Australian VET system as 'cross sector' units

And particularly for training package developers

- To undertake SDG mapping within units, akin to the reporting of unit and qualification outcomes to occupations
- To provide implementation advice on supporting SDG outcomes.

Artibus Innovation will support and advocate for systematic incorporation of SDGs into training packages to meet industry demand. Further, we will be utilising our findings from the industry co-design workshops to refine the best means to support industry to improve sustainable development outcomes.



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Footnotes

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Comparison of UNESCO ESD and Australian ES Competencies/Components (excluding Australian VET)

UNESCO ESD Competencies	Components for Sustainability Education	Are these similar or different or absent?
Systems Thinking (ability to recognise and understand relationships, complex systems and how they are embedded in domains and scales, and deal with uncertainty)	Systemic Thinking (from things to processes to understand complex situations; identifies relationships; integrated decision-making and adaptive management)	Similar, with some overlap
Anticipatory (understand and evaluate multiple futures)	Envisioning a better future (establishes a link between long term goals and immediate practices)	Similar, without the ESD attention to evaluation.
Normative (understand and reflect on norms, and negotiate conflicts of interest)		No SD equivalent. Occupational ethics units may address these issues, but not in the context of sustainable development which will pose new and novel challenges to normative understandings and current practices.
Strategic (develop and implement innovative actions that further sustainability on a local level and further afield)		No SD equivalent.
Collaboration (learn from, understand and respect others, deal with conflicts, and facilitate collaborative and participatory problem solving)	Participation Partnerships for change	Similar
Critical Thinking (question norms and values, including one's own, and take a position on sustainability discourse)	Critical thinking and reflection (examine underlying assumptions about the world, and beneath symptoms of unsustainable practices)	Similar, but SD does not include critical reflection on your own position on sustainability actions. This tacitly assumes a high degree of functional neutrality with regards to sustainable development which may not be possible for values-based workers.
Self-awareness		No SD equivalent. Also missing from Critical Thinking, as outlined immediately above.
Integrated Problem-Solving (integrating above competencies to solve complex problems)		No SD equivalent of high-level competencies.

Appendix

Extracts from UNESCO, (2017) *Education for Sustainable Development Goals: Learning Objectives*.

United Nations Educational, Scientific and Cultural Organization. France. Pg 10, 32, & 33

1. Learning objectives for achieving the SDGs

ESD can develop cross-cutting key competencies for sustainability that are relevant to all SDGs. ESD can also develop specific learning outcomes needed to work on achieving a particular SDG.

1.1. Cross-cutting key competencies for achieving all SDGs

As societies around the world struggle to keep pace with the progress of technology and globalization, they encounter many new challenges. These include increasing complexity and uncertainty; more individualization and social diversity; expanding economic and cultural uniformity; degradation of the ecosystem services upon which they depend; and greater vulnerability and exposure to natural and technological hazards. A rapidly proliferating amount of information is available to them. All these conditions require creative and self-organized action because the complexity of the situation surpasses basic problem-solving processes that go strictly according to plan. People must learn to understand the complex world in which they live. They need to be able to collaborate, speak up and act for positive change (UNESCO, 2015). We can call these people “sustainability citizens” (Wals, 2015; Wals and Lenglet, 2016).

There is general agreement that sustainability citizens need to have certain key competencies that allow them to engage constructively and responsibly with today’s world. **Competencies** describe the specific attributes individuals need for action and self-organization in various complex contexts and situations. They include cognitive, affective, volitional and motivational elements; hence they are an interplay of knowledge, capacities and skills, motives and affective dispositions. Competencies cannot be taught, but have to be developed by the learners themselves. They are acquired during action, on the basis of experience and reflection (UNESCO, 2015; Weinert, 2001).

Key competencies represent cross-cutting competencies that are necessary for all learners of all ages worldwide (developed at different age-appropriate levels). Key competencies can be understood as transversal, multifunctional and context-independent. They do not replace specific competencies necessary for successful action in certain situations and contexts, but they encompass these and are more broadly focused (Rychen, 2003; Weinert, 2001).

The following key competencies are generally seen as crucial to advance sustainable development (see de Haan, 2010; Rieckmann, 2012; Wiek et al., 2011).

Box 1.1. Key competencies for sustainability

Systems thinking competency: the abilities to recognize and understand relationships; to analyse complex systems; to think of how systems are embedded within different domains and different scales; and to deal with uncertainty.

Anticipatory competency: the abilities to understand and evaluate multiple futures – possible, probable and desirable; to create one’s own visions for the future; to apply the precautionary principle; to assess the consequences of actions; and to deal with risks and changes.

Normative competency: the abilities to understand and reflect on the norms and values that underlie one’s actions; and to negotiate sustainability values, principles, goals, and targets, in a context of conflicts of interests and trade-offs, uncertain knowledge and contradictions.

Strategic competency: the abilities to collectively develop and implement innovative actions that further sustainability at the local level and further afield.

Collaboration competency: the abilities to learn from others; to understand and respect the needs, perspectives and actions of others (empathy); to understand, relate to and be sensitive to others (empathic leadership); to deal with conflicts in a group; and to facilitate collaborative and participatory problem solving.

Critical thinking competency: the ability to question norms, practices and opinions; to reflect on own one’s values, perceptions and actions; and to take a position in the sustainability discourse.

Self-awareness competency: the ability to reflect on one’s own role in the local community and (global) society; to continually evaluate and further motivate one’s actions; and to deal with one’s feelings and desires.

Integrated problem-solving competency: the overarching ability to apply different problem-solving frameworks to complex sustainability problems and develop viable, inclusive and equitable solution options that promote sustainable development, integrating the above-mentioned competences.

1.2.11. SDG 11 | Sustainable Cities and Communities | Make

cities and human settlements inclusive, safe, resilient and sustainable

Table 1.2.11. Learning objectives for SDG 11 “Sustainable Cities and Communities”

Cognitive learning objectives	<ol style="list-style-type: none">1. The learner understands basic physical, social and psychological human needs and is able to identify how these needs are currently addressed in their own physical urban, peri-urban and rural settlements.2. The learner is able to evaluate and compare the sustainability of their and other settlements’ systems in meeting their needs particularly in the areas of food, energy, transport, water, safety, waste treatment, inclusion and accessibility, education, integration of green spaces and disaster risk reduction.3. The learner understands the historical reasons for settlement patterns and while respecting cultural heritage, understands the need to find compromises to develop improved sustainable systems.4. The learner knows the basic principles of sustainable planning and building, and can identify opportunities for making their own area more sustainable and inclusive.5. The learner understands the role of local decision-makers and participatory governance and the importance of representing a sustainable voice in planning and policy for their area.
Socio-emotional learning objectives	<ol style="list-style-type: none">1. The learner is able to use their voice, to identify and use entry points for the public in the local planning systems, to call for the investment in sustainable infrastructure, buildings and parks in their area and to debate the merits of long-term planning.2. The learner is able to connect with and help community groups locally and online in developing a sustainable future vision of their community.3. The learner is able to reflect on their region in the development of their own identity, understanding the roles that the natural, social and technical environments have had in building their identity and culture.4. The learner is able to contextualize their needs within the needs of the greater surrounding ecosystems, both locally and globally, for more sustainable human settlements.5. The learner is able to feel responsible for the environmental and social impacts of their own individual lifestyle.
Behavioural learning objectives	<ol style="list-style-type: none">1. The learner is able to plan, implement and evaluate community-based sustainability projects.2. The learner is able to participate in and influence decision processes about their community.3. The learner is able to speak against/for and to organize their voice against/for decisions made for their community.4. The learner is able to co-create an inclusive, safe, resilient and sustainable community.5. The learner is able to promote low carbon approaches at the local level.

Box 1.2.11a. Suggested topics for SDG 11 “Sustainable Cities and Communities”

The need for shelter, safety and inclusiveness (human needs, contextualizing our different individual and collective wants and needs according to gender, age, income and ability)

Management and use of natural resources (renewables and non-renewables)

Sustainable energy (residential energy use, renewable energies, community energy schemes) and transportation

Sustainable food (agriculture, organic agriculture and permaculture, community supported agriculture, foodshed⁸, food processing, dietary choices and habits, waste generation)

Urban ecology and how wildlife is adapting to humanity’s settlements

Sustainable resilient buildings and spatial planning (building materials, energy saving, planning processes)

Waste generation and management (prevention, reduction, recycling, reuse)

Communities and their dynamics (decision-making, governance, planning, conflict resolution, alternative communities, healthy communities, inclusive communities, ecovillages, transition towns)

Water cycle and restoring ground water through urban design (Green Roofs, rainwater harvesting, daylighting old river beds, sustainable urban drainage)

Disaster preparedness and resilience, resilience to weather problems and in the future and a culture of prevention and preparedness

Box 1.2.11b. Examples of learning approaches and methods for SDG 11 “Sustainable Cities and Communities”

Excursions to ecovillages and other “living laboratories”, to waste water treatment plants and other service centres to show current and best practice

Develop and run a (youth) action project on sustainable cities and communities

Invite older generations in to talk about how the settlement has changed over time. Ask them about their connection to the bioregion. Use art, literature and history to explore the settlement area and its changes

Build a community garden

Mapping projects: map the area to note where there is good use of public open space, human scale planning, areas where the needs of the community are addressed, green spaces, etc. This can also map the areas that need to be improved, such as areas most exposed to natural hazards

Develop a two-minute video clip on an example of a sustainable urban community

Develop an enquiry-based project: “Would it be more sustainable if we all lived in cities?”