LEARNING THROUGH REFLECTION

–THE PORTFOLIO METHOD AS A TOOL TO PROMOTE WORK-INTEGRATED LEARNING IN HIGHER EDUCATION

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Abstract

Students need to develop meta-reflection to strengthen their learning process and to be able to manage the continuous changes encountered in both higher education and workplaces. Reflection is the most important skill for achieving progress in work-integrated learning. For students to develop meta-reflection and achieve progression in their work-integrated learning, they need a systematic structure and tools they use consciously. The portfolio method could be one of those tools.

In the present article, we discuss, from a theoretical standpoint, how teachers can develop a better structure for students so that students can strengthen their learning process and progression in their work-integrated learning in higher education during work placements, which in turn will promote lifelong learning. This progression in work-integrated learning will be discussed in relation to the "WIL4U" model together with examples of reflection questions, learning outcomes, learning activities and examination forms. The "WIL4U" model was developed from the "AIL 4E (DUCATION)" model created by Bernhardsson, Gellerstedt and Svensson.

The purpose of the present conceptual discussion article is to highlight the portfolio method as a structure and tool for progress in work-integrated learning through reflection.

With support of the portfolio method, students can develop their ability to make well-balanced, conscious and reflected choices in planning actions for work-integrated learning. This requires well-developed self-

regulation and the ability to engage in meta-cognition and systematic meta-reflection to evaluate the effects of various actions. The portfolio method can also improve the reflection process and develop students' ability to self-learn, emphasize strengths and increase their ability to achieve learning outcomes in higher education.

Keywords: lifelong learning, portfolio method, reflection, work-integrated learning

1   INTRODUCTION

In work-integrated learning in higher education, a variety of methods for students to test their knowledge are applied. This can be accomplished through periods of work placement, co-operative education, student employee ship, project work, field studies, mentoring projects or in another form. Work-integrated learning is a way to transcend the idea that scientific theoretical knowledge is hierarchically superior to knowledge and actions in working life. The cross-border and integrated approach that students face in everyday life offers important learning situations. Work-integrated learning provides students with rich experiences of integrating relevant knowledge with action and of developing as individuals and preparing for sustainable employment [https://www.hv.se/arbetsintegrerat-larande/var-filosofi-bakom-ail/ail-och-akademisk-kvalitet-i-utbildningen/].

Students need to reflect on their learning process to strengthen their learning and to be able to understand how to develop meta-reflection for managing the continuous changes and challenges encountered in both higher education and workplaces. Students need structures and tools to help them to reflect both individually and with others (e.g., students, teachers and supervisors). Reflection is the most important tool to achieving progression in work-integrated learning, but we cannot use reflection mechanistically. Everyday reflection is not enough; students must reach the level of meta-reflection if they are to create a deeper understanding of knowledge that enables knowledge in action. Learning to reflect is an art, and it requires training. For students to develop meta-reflection and achieve progression in their work-integrated learning, they need systematic structure and tools they use consciously. The portfolio method could be one of those tools [1].

To promote and strengthen students' work-integrated learning for lifelong learning in higher education, the portfolio method and its systematic structure can be used. The portfolio method can support students in their learning process by helping them to ask themselves reflective questions and evaluate their own

knowledge and skills. The portfolio method can also strengthen students' ability to evaluate actions and to critically review and develop their actions through self-evaluation [1, 2-3].

In the present article, we will discuss, from a theoretical perspective, how students can develop a better structure for achieving progress in their work-integrated learning in higher education through use of the portfolio method during their internship. This work-integrated learning progression will be discussed in relation to the "WIL4U" model together with examples of reflection questions, learning outcomes, learning activities and examination forms. The present article can be considered a conceptual discussion paper.

2   REFLECTION - AN ACTIVITY FOR DEVELOPING COMPREHENSION SKILLS IN HIGHER EDUCATION

Reflection is the most important educational activity for developing comprehension skills and is primarily based on the individual's experience. According to Emsheimer [4], reflection is something more than everyday "thinking". The purpose of reflection is to develop new patterns of thought and to seek solutions to different issues, the goal being to put knowledge into action. Therefore, reflection is an ongoing process that includes knowledge, skills, attitudes, knowing and insight for developing personal skills. The structure of reflection should be clear and be implemented systematically.

Van Woerkom, Nijhof and Nieuwenhuis [5] describe reflection as an intellectual activity that can be seen from a time perspective. Intellectual activity means that students examine their own actions in a specific situation. In this examination, students review their own experiences of the situation and analyse cause and effect. Thereafter, they draw conclusions concerning how the future action could be carried out. Using a time perspective, students can be reflective practitioners and perceive similarities, differences and variations. They can also conduct a "reflective conversation" with themselves in the situation and try new approaches. Renewal is accomplished when students start looking at the situation in a new way to gain a deeper insight into their reality [6-8]. Effective reflection requires a structure with reflective questions, which is highlighted in Gibbs' [9] reflection process model (Figure 1), which consists of six stages the student goes through systematically, stage by stage. The first stage is a description of an experience – an event that creates thoughts and emotions. The second stage involves creating clarity and concretely formulating thoughts and emotions. The third stage helps the student to understand

his/her feelings and thoughts. In the fourth and fifth stages, the student analyses what has happened. In these stages, the student can use a constructive critical approach. In the sixth and final stage, the student formulates an action plan.
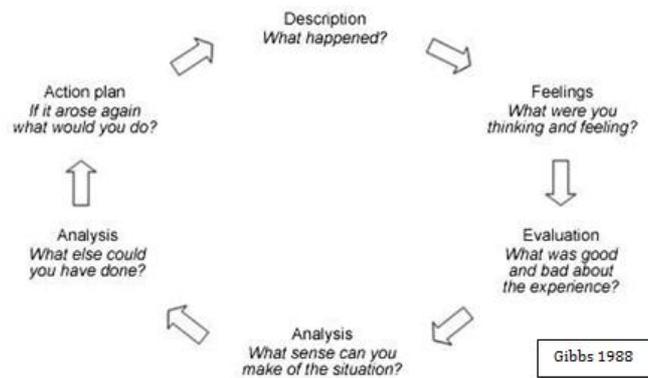

Figure 1. Gibbs' reflection process model [9].

Reflection can be trained with the support of one's senses, by documenting what one has perceived and conversing with oneself. It is a form of storytelling that involves documenting one's ideas. By writing down the situation, using a narrative, the situation can be understood. Didactic questions (what? how? why?) can also support students in creating comprehension knowledge [10-12].

According to Tiller [13], thinking over and thinking through what we are experiencing is a form of reflection. With the support of reflection, experiences can be transformational to learning. Tillers' [13] "Everyday reflection" model (Table 1) can support practising reflection by taking a daily time-out. The model includes three steps. The first step involves taking 10 minutes of "thought respite". The second step entails responding to predetermined reflection questions in one's thoughts. In the third step, a few keywords, a line or a few lines are written down to respond to each reflection question.

Everyday reflection
Predetermined reflection questions
What have I experienced today?   Why is this important for me?

Think of the bright and positive events
Why was it so good?
Think of the more difficult and problematic experiences and why it became difficult
How do I want to go further and use this knowledge in practical action?
How do I obtain more knowledge about this area?

Table 1. Everyday reflection model [13]

2.1   Work-integrated learning and the Portfolio method

Work-integrated learning

Generally, work-integrated learning is considered an umbrella term for various methods and strategies aimed at integrating theoretical knowledge into the workplace. This means that work-integrated learning integrates the theory of learning with work practice. This is achieved through a designed curriculum, teaching activities and student engagement and by linking the curriculum to the assessment of outcomes. Because assessment is part of the education process, teachers play a key role in organizing and structuring the learning, and their skills and capacities are vital in this process [14-16]. Work-integrated learning can also be seen as a guide to organizing vocational programmes and a strategy for determining their specific content, with a focus on learning, knowledge exchange and knowledge development [17]. Work-integrated learning concerns learning through a lively exchange of ideas, reflective conduct, active participation and educational development. For true work-integrated learning, learning needs to take place at work. A variety of paths can be used for students to test their knowledge. This can be achieved, for instance, through clinical placement for students, which involves unpaid work. Students learn about the work and connect theoretical knowledge with practical knowledge in daily work. Through clinical placement, students broaden their academic knowledge and prepare for working life. Clinical placement also provides students with experiences and insights they can bring back to the university. Co-operative education takes the form of periods of study alternating with periods of paid work, and students' project work or examinations can be carried out in close collaboration with the workplace, which provides them with occasions to reflect on their own learning activities and learning outcomes. Students have the opportunity to use the theoretical knowledge they have acquired in

education by applying this knowledge in practice, or they can use problems or situations taken from practice during the clinical placement. Field studies involve shorter work placement in the professional field, where events are studied in their natural environment. According to Osgood and Richter [18], the teacher can ask various questions to clarify what important knowledge students should acquire from their experiences in work-integrated learning. Work-integrated learning can enhance students' abilities regarding abstract and critical thinking, collaboration, decision-making, organizational insight and professionalism [17]. The teacher can ask the following questions [18, pp. 21-22]:

– What key information, ideas or perspectives are important for students to know?

– What kind of thinking, complex tasks and skills should students be able to perform or manage?

– What relationships should students be able to understand and perform within and outside the experience of work-integrated learning?

– What should students learn about themselves and about interacting with others?

– What changes in students' emotions, interests and values are important?

– What will students learn about learning to become self-governing?

Work-integrated learning can be seen from three pedagogical perspectives: i) *work-integrated* learning, focusing on socialization and the profession, ii) work-integrated learning, focusing on the usefulness of the education, and iii) work-integrated *learning*, focusing on lifelong learning. For this reason, it is of interest to strive to integrate scientific and practical knowledge as well as to promote interaction between education, research and society at large. Work-integrated learning exemplifies the important relationship between the academy and the professional world. In this context, work-integrated learning can be seen as an effective pedagogical strategy for achieving active exchange of knowledge, reflected action and lifelong learning [17, 19-22].

The Portfolio method

One of the main ideas behind the portfolio method is that students have the opportunity to take control of their own learning and thereby become more active in their learning. The portfolio can be formed either as a binder or folder, or in digital form, and can serve as a starting point for students' learning throughout the practice. The portfolio method can serve as a basis for reflection and become a mirror image of the learning process, and in this way relate the present to the future, thus contributing to a

deeper understanding of one's own knowledge of the process. Figure 2 illustrates the important parts of the portfolio method as an ongoing process [2-3].
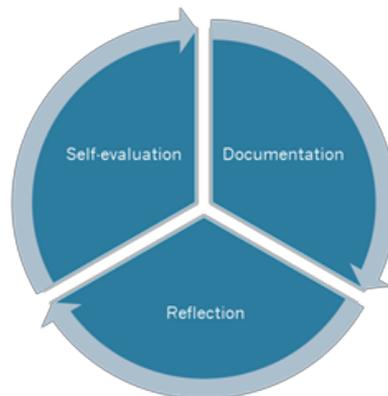

Figure 2. The important parts of the Portfolio method [2].

The portfolio method is based on the theories of Bloom, Brookfield, Dewey, Kolb, Perry and Schön [23], and constitutes a systematic and purposeful way to learn and develop skills, knowledge and attitudes [2-3].

The portfolio method includes key concepts, which will be described below. Systematic reflection means that students seek answers that can generate new solutions and strategies from previous experience and understanding of a situation, a problem or an action. Documentation or narrative expressive storytelling means that students express their feelings and knowledge experiences in relation to a question, problem or situation. Narrative expressive storytelling can support students in creating an educational way of working for their own learning. Self-regulation refers to students' ability to deliberately regulate and control their emotions and thoughts so as to achieve desired goals. Self-regulation has a basis in self-efficacy, which focuses on students' confidence in their ability to handle a specific situation or problem. Instructional scaffolding is used to provide students with support in finding strategies to develop their knowledge and skills. Using instructional scaffolding – for example, peer learning, teacher assistance and pedagogical models for students – students are given the opportunity to train their independent thinking and assume responsibility for their own learning. Meta-cognition or meta-reflection means that students reflect on their own learning and find solutions to problems or tasks. Meta-cognition or meta-reflection involves deliberate control of cognitive activities in students' learning process [2-3].

3 THE "WIL4U" MODEL – A DEVELOPMENT OF THE "AIL 4E (DUCATION) MODEL"

The "WIL4U" model has been developed from the "AIL 4E (DUCATION)" model presented by Bernhardsson, Gellerstedt and Svensson [24] (Figure 3). The purpose of the "WIL4U" model is to develop a better structure and to strengthen students' learning process and progression in their work-integrated learning, with support of the portfolio method, both in higher education and during the work placement. The portfolio method can improve the reflection process, develop a better structure and strengthen students' work-integrated learning process during their work placement. The portfolio method can also develop students' ability to cope, develop self-knowledge, highlight strengths and increase self-learning and self-evaluation [1]. The factors of the "WIL4U" model will be described below.
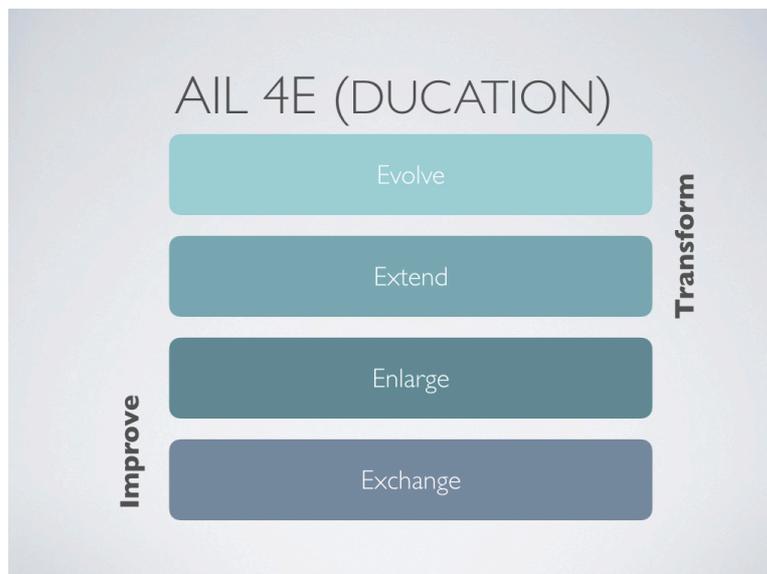

Figure 3. The "AIL 4E (DUCATION)" model [24].

3.1 How can the "WIL4U" model be applied in higher education?

The aim of the "WIL4U" model is the four steps in the model (exchange, enlarge, extend and evolve) to follow the education programme. Tentatively, step 1 is included in year 1, steps 2 and 3 are included in year 2, and step 4 is included in year 3. The aspects transform and improve are included in the programme to develop work-integrated learning, and these aspects must be connected to the workplace and the surrounding society. Workplace supervisors or mentors can be linked to the students' theoretical education and provide valuable insights and knowledge. The supervisor's role is to create conditions in

which students can achieve goals during their placement practice. The supervisor, in collaboration with students, creates educational opportunities, which give students the opportunity to acquire knowledge and skills that contribute to the development of their professional identity. This facilitates the interaction between students' studies and their future career.

The four steps are based on Biggs' SOLO taxonomy [25] and Bloom's taxonomy for learning outcomes [25]. Bloom's taxonomy [26] describes learning as a process, based on a basic level that gradually evolves towards increasingly complex levels. This way of describing learning emphasizes cognitive development. Therefore, it is of crucial importance to pay attention to affective aspects and everyday practice in the situation being reflected on. The reflection questions in the model were developed by Pennbrant and Nunstedt [1] and have their starting point in the portfolio method.

3.1.1   Step 1. Exchange (Factual knowledge)

The "Exchange" level is based on factual knowledge, where students should be able to identify, define and describe facts and carry out simple tasks. At this level, students rehearse someone else's definition of a principle.

The following questions may be used as the starting point for teachers in writing learning outcomes, learning activities and examination forms. Students can ask themselves reflection questions to strengthen their work-integrated learning. They can also reflect on their own goals and the activities needed to understand and achieve work-integrated learning.

These are examples of reflection questions:

– What prior knowledge of work-integrated learning do I have?

– What is important to learn?

– How is this to be done?

– What activities are required?

– How should these activities be understood from the perspective of work-integrated learning?

These are examples of learning outcomes in relation to work-integrated learning:

– Identify scientific basis and research in relation to work-integrated learning

– Reflect on and describe your own needs regarding knowledge about integrate learning at work

– Plan and demonstrate a situation that integrates learning at work

– Explain and provide some examples of activities that integrate learning at work

These are examples of learning activities:

– Role-playing episodes that are recorded, analysed and linked to theory and practice as well as to the function of one's future professional role

– Oral presentations such as poster presentations or PowerPoint presentations

These are examples of examination forms:

– A practical situation

– An oral or written examination

– A quiz

3.1.2 Step 2. Enlarge (Comprehension)

The "Enlarge" level involves students using their own words to describe their understanding of the phenomenon, explain the principles and give examples of how they used these principles in various areas. The aim of step 2 is for students to be able to generalize, list and combine knowledge to create meaning and to see the context of knowledge, cause and effect. Students should also understand and explain knowledge in their own words as well as to extend their knowledge of a phenomenon.

The following reflection questions may be the starting point for teachers who wish to write learning outcomes for students.

These are examples of reflection questions:

– What knowledge have I developed about work-integrated learning?

– What have I learned that I did not know before?

– How have I learned?

– How have I developed knowledge about work-integrated learning?

– How is it that I have learned?

– How can I understand this?

These are examples of learning outcomes in relation to work-integrated learning:

– Explain, describe and exemplify a phenomenon and its use in different contexts

– Describe and evaluate your knowledge and further need for knowledge in your future professional role

This is an example of a learning activity:

– Field studies that are processed theoretically and should be understood based on the role and responsibilities of the future professional role

These are examples of examination forms:

– Peer assessment and peer learning in different work placement situations

– Simulate different situations in different contexts

3.1.3 Step 3. Extend (Apply and analyse)

In step 3, "Extend", students should be able to compare and contrast, explain causes, analyse, relate and personally apply the policy on procedures in real-life situations. They should also be able to separate facts from principle assumptions. Students should be able to use this knowledge in a practical context for solving tasks and problems. Other skills the students should have involve being able to discern the individual parts of a whole, perceive different aspects of a problem or situation, and separate them into component parts to understand the structure. The following reflection questions may be the starting point for teachers who wish to write learning outcomes for students.

These are examples of reflection questions:

– How can I support knowledge of work-integrated learning with the help of theory?

– How do I want to proceed with this knowledge?

– How can I put this knowledge into practice?

These are examples of learning outcomes in relation to work-integrated learning:

– Analyse, explain and argue for theories and models of importance for work-integrated learning

– Relate theories and models of work-integrated learning and discuss them in relation to practical situations

These are examples of learning activities:

– Case study

– Role-play

These are examples of examination forms:

– Reflective writing

– Critical incident analysis

3.1.4   Step 4. Evolve (Synthesis and valuation)

Step 4, "Evolve", is based on students' ability to combine a number of principles to create a new operational approach and to assess use of the new strategy. This includes, among other things, combining, elaborating, explaining, relating and developing new patterns and textures, and drawing one's own conclusions and interpreting the situation. This entails students creating their own reflections in relation to what they have learned and finding alternative solutions. This includes evaluating and critically reviewing sources, theorizing, generalizing, formulating hypotheses as well as reflecting and making an assessment based on different criteria. Self-assessment refers to students making a cognitive recast in relation to theoretical knowledge. The following reflection questions may be the starting point for teachers who wish to write learning outcomes for students. The reflection questions can support the development of learning activities and examination forms that are consistent with the purpose of the course.

These are examples of reflection questions:

– What knowledge has been generated about work-integrated learning?

– How have I learned?

– What knowledge has been developed about work-integrated learning in the learning process? (Meta-
   reflection)

– How did I understand this?

– How has knowledge been developed about work-integrated learning in the learning process?

These are examples of learning outcomes in relation to work-integrated learning:

– Describe and explain how a phenomenon works in practice

– Analyse and discuss similarities and differences in a phenomenon between different work placements

These are examples of learning activities:

– Field studies

– Project works

These are examples of examination forms:

– Writing analytic and reflective essays

– Demonstration

– Task-oriented assessment

3.1.5 Transform and improve

It is important to maintain knowledge about work-integrated learning so that knowledge that is developed does not disappear. It is also important to transform and improve knowledge about work-integrated learning, which is a prerequisite for development. Includes in this are maintaining, transforming and improving generic competencies or skills. It is important that the learning outcomes are clear and that it is the student who is the active party, with a focus on learning results. The skills and abilities to maintain, but also to transform and improve, work-integrated learning must be in phase with the aim of the course, together with the learning outcomes, learning activities and examination forms. Therefore, it is important that the course design, learning activities and learning outcomes be linked with the examination, i.e., that constructive alignment be achieved. Exchange of knowledge can then be shared between the academy, external stakeholders and the surrounding community. This enables a constructive partnership for lifelong learning.

The generic competencies or abilities include students' development of *autonomy, communication skills (oral and written), analytical proficiency, critical ability, assessment in information retrieval, group collaboration, problem-solving and the ability to plan their time.*

3.2   An example of how to enhance the work-integrated learning process

Bernhardsson, Gellerstedt and Svensson [24] provide an example of how students can develop an understanding of different knowledge in practice by focusing on a nurse student who is doing her first work placement period in a hospital emergency unit. The learning outcomes focus on how the student should treat patients at the unit. The same nursing student does her second work placement period at a primary healthcare centre where the learning outcomes have been prolonged by allowing the student to focus on the differences between patient encounters at the emergency unit and those at the primary healthcare centre as well as to analyse these differences. Analysing and discussing similarities and differences between encounters at different work placements can be added as a learning outcome that goes beyond other learning outcomes. Creating learning outcomes that relate specifically to the work placement can provide an opportunity to develop work-integrated learning. If students then engage in meta-reflection over the differences, they can develop an understanding of how their own knowledge has been created through different work placement and experienced the same phenomenon in different context. According to Sattler [27], reflective activities play an important role in supporting knowledge transformation in work-integrated learning. Students can think from different perspectives when considering how to solve a task or a problem and strengthen their ability to develop meta-cognition. In this way, they can work in a self-regulated manner and achieve self-efficacy, enabling them to manage different learning situations together with others in a social interaction. The portfolio method can serve as a tool to promote work-integrated learning [1].

4   CLOSING REFLECTIONS

The purpose of this conceptual discussion article was to highlight the portfolio method and the "WIL4U" model as a structure and tool for progressing in work-integrated learning through reflection. The reflection questions can create a systematic reflection process by questioning and reassessing previous perceptions, evaluations, understanding and actions.

This systematic reflection can be a form of activity for helping students to develop knowledge and skills, facilitate learning with continuous feedback, gradually increase complexity, access to course material, and opportunities to practice independent thinking and responsibility for learning.

During systematic reflection, narrative expressive storytelling can be an instructional scaffolding that is used to help students to express their inner, emotional and intellectual ideas about, for example, a situation, an event or a process. Narrative expressive storytelling helps students to develop knowledge and skills and to support their own learning. By using narrative expressive storytelling, students can develop self-regulation, which entails having control over one's emotional life and thoughts, the goal being to achieve desired goals. Self-regulation is based on students' self-efficacy beliefs, which refers to their evaluation of their own ability to handle a specific task or situation. The four steps in the "WIL4U" model can enable "reflective assignment" (see figure 4).
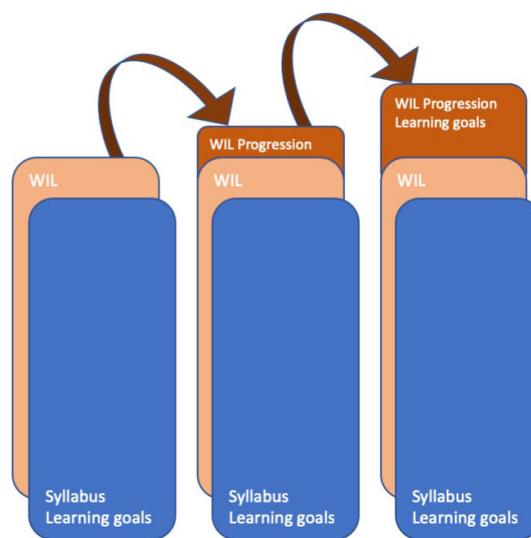

Figure 4. Reflective assignment.

Work-integrated learning is often seen as a teaching form, equivalent to seminars or lectures. It is therefore considered the best method for students to acquire knowledge and achieve knowledge goals as described in the curriculum. At the same time, the work-integrated learning activity can involve unique goal descriptions for work-integrated learning knowledge that students generate in practice and through reflection on different context and events. These work-integrated learning outcomes do not need to be directly linked to the subject encompassed in the syllabus, but can be serve as unique knowledge outcomes in their own right. Work-integrated learning generates knowledge about work-integrated learning. The context and the situation can result in additional learning that goes beyond the learning outcomes. Work-integrated learning thus becomes its own area of knowledge.

With the support of the "WIL4U" model in higher education, students can be given opportunities to achieve learning through reflected action and committed participation as well as to test and practise their knowledge. The model can help students to control their personal and social experiences for knowledge development by linking professional life to their education. This work includes theoretical knowledge that is processed through reflection, and learning can be developed and integrated into the work. Even experience-based knowledge can be processed and developed into learning that can be integrated into the work in the form of new skills. In this way, the "WIL4U" model can facilitate the learning experience through continuous feedback, gradually increasing complexity and access to appropriate course material.

The "WIL4U" model can increase opportunities for self-evaluation and critical review of students' own knowledge and need for more knowledge; clarify personal and professional development for the students in the education programme; create connections between courses; facilitate teachers' and supervisors' work with students' learning process; facilitate students' own learning and self-development. The "WIL4U" model provides the conditions to support students in their personal and professional experiences for knowledge development. This includes encouraging students to be motivated and committed to lifelong learning.

In order to create conditions for students to develop professional competence, work-integrated learning must be deliberately systematized by using the structure and content of the portfolio method.

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