3rd Workshop on Higher Education Partnerships for Sub Saharan Africa, 15 - 16 July 2021

Engineering education for development through two philosophical lenses

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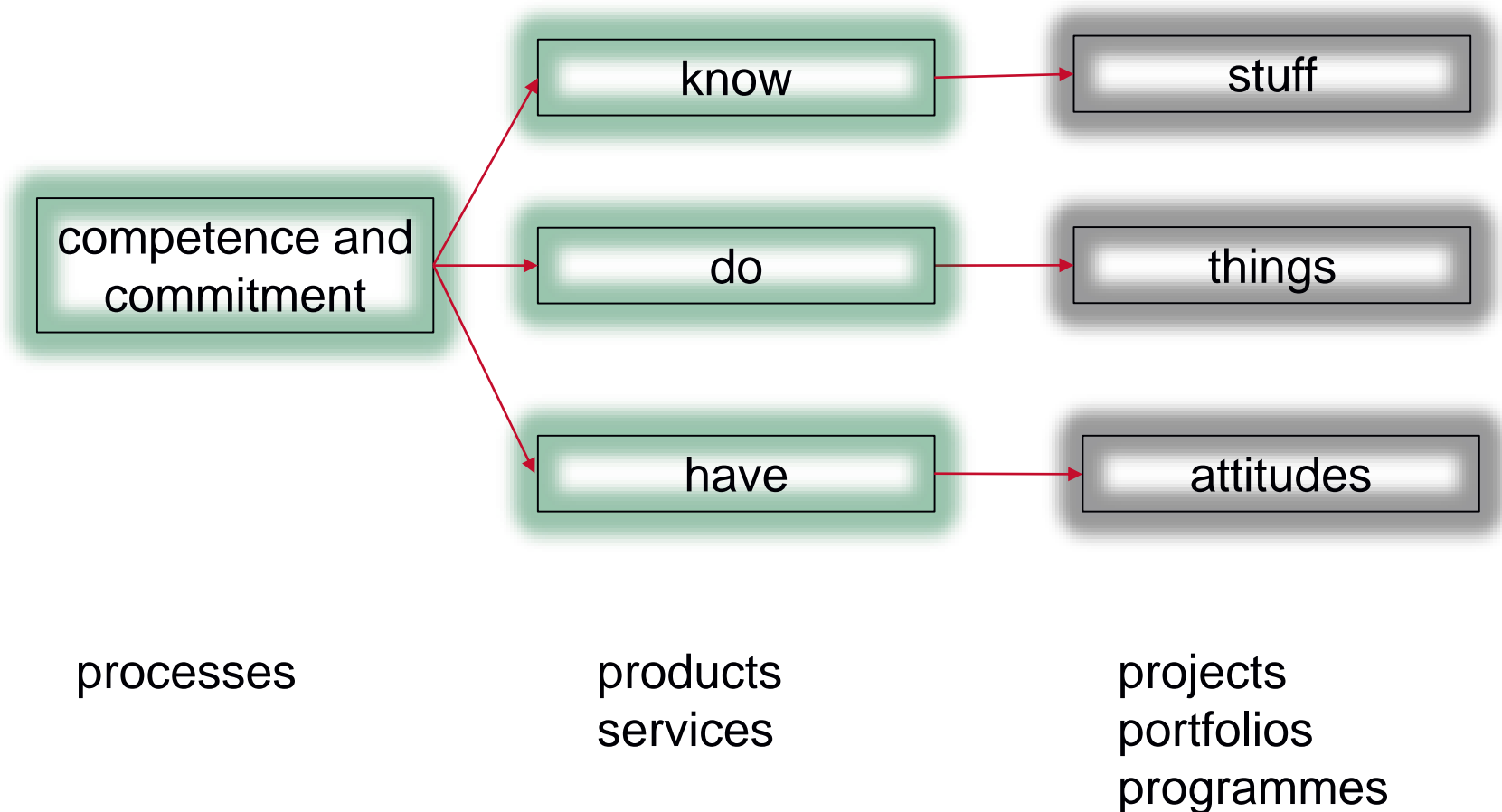
WE BUILD FOR THE FUTURE

outline

1. introduction

2. engineering education

3. development (sustainable)

4. the teleological lens

5. the existentialism lens

6. questions to consider

introduction

Discussion and feedback from 2nd Workshop held in January 2021, particularly, relating to delivering the curriculum amidst the COVID-19 pandemic.

engineering education

competence and commitment → know → stuff

competence and commitment → do → things

competence and commitment → have → attitudes

processes

products
services

projects
portfolios
programmes

development

processes

products
services

projects
portfolios
programmes

the teleological lens

Teleology is the (philosophical) idea that things happen, or exist, for the sake of other things i.e. everything has a *telos* – an inherent purpose or end goal.

Teleology has been considered by the great philosophers such as Aristotle, Plato, Kant, Spinoza and Hagel as well the likes of what we may call modern-day scientists like Robert Boyle and Pierre Maupertuis.

Telos:

- applies to natural and man-made things

- arises from intrinsic/or extrinsic sources

- arises from direct and/or indirect intentionality

- can help us explain phenomena

- is achieved through *techne,* rational method involved in accomplishing a goal

the existentialism lens

Existentialism is the (philosophical) quest to understand the meaning of human life: its goals, significance and the experience of responsibility – shaping the future and living in an authentic way.

Existentialism has been considered by religious thinkers (such as Buber, Marcel and Jaspers) and atheists (such as Sartre, de Beauvoir and Camus). It has roots in the ideas of Pascal, Kierkegaard, Dostoyevsky, Nietzsche, Kafka, St Augustine, Plato, Lao Tzu and the Buddha.

Existentialism suggests that:

- human life is about acting, making choices, using things that come to hand as tools, exploring relationships, and the effect they have on the life – humans should be actors, not observers; what counts is the experience of life as it is lived.

- humans are shaped by the choices they make and not by predetermined essence, in other words, existence precedes essence.

- humans live forwards; they are always planning, looking forward to things.

- humans are 'condemned to be free' to decide how they will understand and respond to the circumstances in which they find themselves.

- being oneself and taking responsibility for one's actions/decisions is ***authenticity***

- avoiding personal authenticity and responsibility is ***bad faith***

some questions:

what does teleology + existentialism mean for us in our quest to achieve engineering education for development?

1. what is the *telos* of the academic, student, graduate engineer, professional engineer? (we can consider this at the granular level e.g. by subject)

2. can one use the *telos* to define oneself as academic, student, graduate engineer, professional engineer? (we can consider this at the granular level e.g. by subject)

3. what is our *techne* for the telos in a business as usual situation?

4. what is our *techne* for the telos in a disrupted situation such as during the COVID-19 pandemic?

5. how does our *techne* promote authenticity?

6. how can one live an authentic life as an academic, student, graduate engineer, professional engineer? (we can consider this at the granular level e.g. by subject)?

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