

ATTITUDES

CE 4200

Professional Engineering Practice Issues

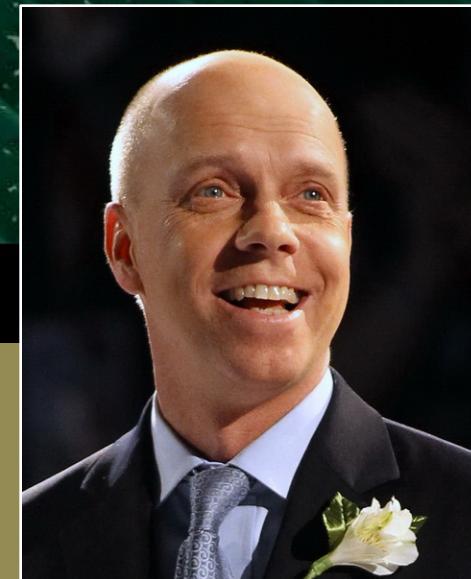
Spring 2022 Semester

William D. Lawson, P.E., Ph.D.



The only disability in life
is a bad attitude.

Scott Hamilton

 BrainyQuote®

“Ripped from the headlines...”

Free ASCE Journal Articles



ASCE Publications <publications@asce.org>

To Lawson, William D

Journal of Management in Engineering / Volume 37 Issue 1 - January 2021

Technical Papers Downloaded 421 times

Gendered Knowledge Accessibility: Evaluating the Role of Gender in Knowledge Seeking among Engineers in the US

Cristina Paleacovschi, Ph.D., M.ASCE; Amy Javernick-Will, Ph.D., M.ASCE; Sheng Wang, Ph.D.; and Tony Tong, Ph.D.

SECTIONS DOWNLOAD TOOLS SHARE

Abstract

Women are heavily underrepresented in engineering companies. Gender issues arise in daily interactions where employees may not seek knowledge from others when they need it, even if they know who possesses the knowledge, because they may find the knowledge holder difficult to access. In this research, drawing upon social role theory, it is proposed that knowledge accessibility varies across four different types of gender groups (women seeking knowledge from women, women seeking knowledge from men, men seeking knowledge from men, and men seeking knowledge from women). The hypotheses were tested with data collected from an engineering organization. Based on 530 knowledge-seeking interactions provided from 312 engineers, it is found that, in general, women perceived higher levels of knowledge accessibility than men. Knowledge accessibility represents the time and effort that individuals spend in the process of knowledge seeking. Moreover, the highest perceived accessibility was when women sought knowledge from other women; in contrast, the lowest perceived accessibility was when men sought knowledge from women. The theoretical and managerial implications, especially career-related implications for female professionals in a male-dominated industry, are discussed.

January 2021

Follow us on Twitter: [@ASCEpublishing](#)

ASCE Library

ASCE Journal Highlights



Understanding the role of gender in knowledge seeking among engineers

Women currently represent only approximately 11% of the engineering and construction workforce. Previous research has discussed the marginalization of women in the field, but how does knowledge acquisition play a role. The ability to access and acquire knowledge by employees can affect employees' performance, their career prospects, and organizational success. The authors of a new paper in the *Journal of Management in Engineering* investigate the role of gender in people's perception of knowledge accessibility. The study, based on the real-life knowledge seeking interactions of engineers, is free through January 31, 2021 in the ASCE Library.

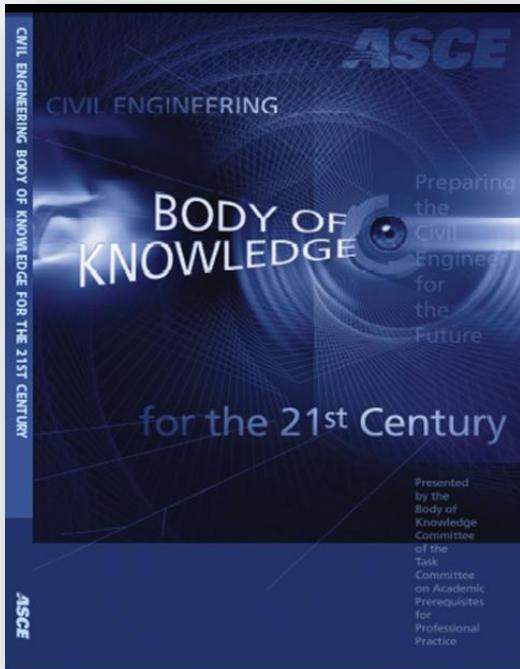
[READ MORE](#)

DEFINITIONS

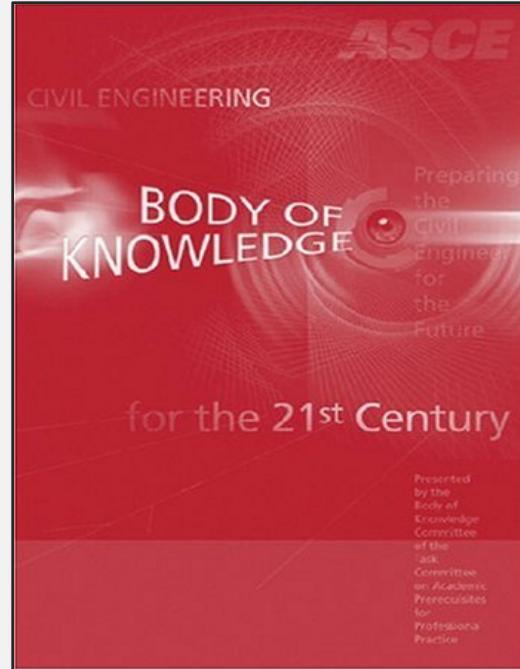
ATTITUDES

PROFESSIONAL ENGINEERING PRACTICE ISSUES

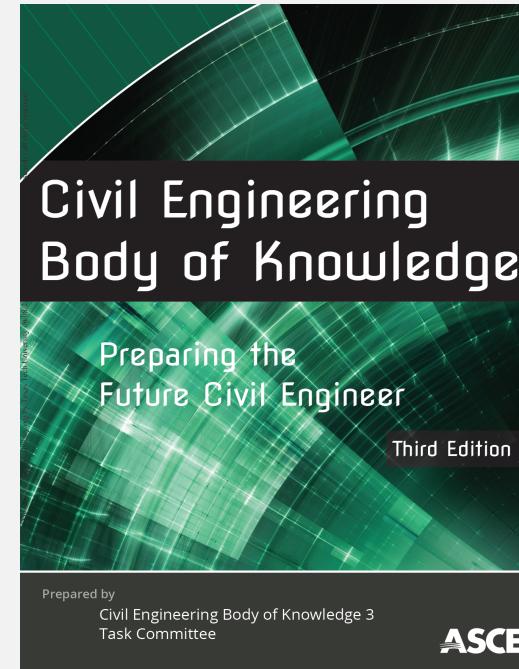
BASIC SOURCE MATERIAL FOR THESE LECTURE NOTES



BOK1 (2004)



BOK2 (2008)



BOK3 (2020)

COGNITIVE LEVEL OF ACHIEVEMENT

Cognitive Domain Level of Achievement	Demonstrated Ability	Typical Pathway
1 Remember (remember previously learned material)	Identify professional attitudes relevant to the practice of civil engineering, including creativity, curiosity, flexibility, and dependability.	Undergraduate education
2 Comprehend (grasp the meaning of learned material)	Explain professional attitudes relevant to the practice of civil engineering, including creativity, curiosity, flexibility, and dependability.	Undergraduate education
3 Apply (use learned material in new and concrete situations)	Apply knowledge of professional attitudes relevant to the practice of civil engineering, including creativity, curiosity, flexibility, and dependability.	Mentored experience
4 Analyze (break down learned material into its component parts so that its organizational structure may be understood)	Illustrate professional attitudes relevant to the practice of civil engineering, including creativity, curiosity, flexibility, and dependability.	Mentored experience
5 Synthesize (put learned material together to form a new whole)	Integrate professional attitudes relevant to the practice of civil engineering, including creativity, curiosity, flexibility, and dependability.	
6 Evaluate (judge the value of learned material for a given purpose)	Assess the effectiveness of professional attitudes relevant to the practice of civil engineering, including creativity, curiosity, flexibility, and dependability.	

AFFECTIVE LEVEL OF ACHIEVEMENT

Affective Domain Level of Achievement	Demonstrated Ability	Typical Pathway
1 Receive (be aware of, be willing to receive, and be attentive to a particular phenomenon or behavior)	Acknowledge professional attitudes relevant to the practice of civil engineering, including creativity, curiosity, flexibility, and dependability.	Undergraduate education
2 Respond (actively participate in an activity, attend to a task, and react to motivation)	Practice professional attitudes relevant to the practice of civil engineering, including creativity, curiosity, flexibility, and dependability.	Undergraduate education
3 Value (attach value to a particular object, phenomenon, or behavior)	Value professional attitudes relevant to the practice of civil engineering, including creativity, curiosity, flexibility, and dependability.	Mentored experience
4 Organize (sort values into priorities by contrasting different values, resolving conflicts between them, and creating a unique value system)	Establish professional attitudes relevant to the practice of civil engineering, including creativity, curiosity, flexibility, and dependability.	Self-developed
5 Characterize (follow a value system that controls behavior that is pervasive, consistent, predictable, and a defining characteristic)	Advocate for professional attitudes relevant to the practice of civil engineering, including creativity, curiosity, flexibility, and dependability.	

Exercise 3.1

Explore the professional attitudes of creativity, curiosity, flexibility, dependability



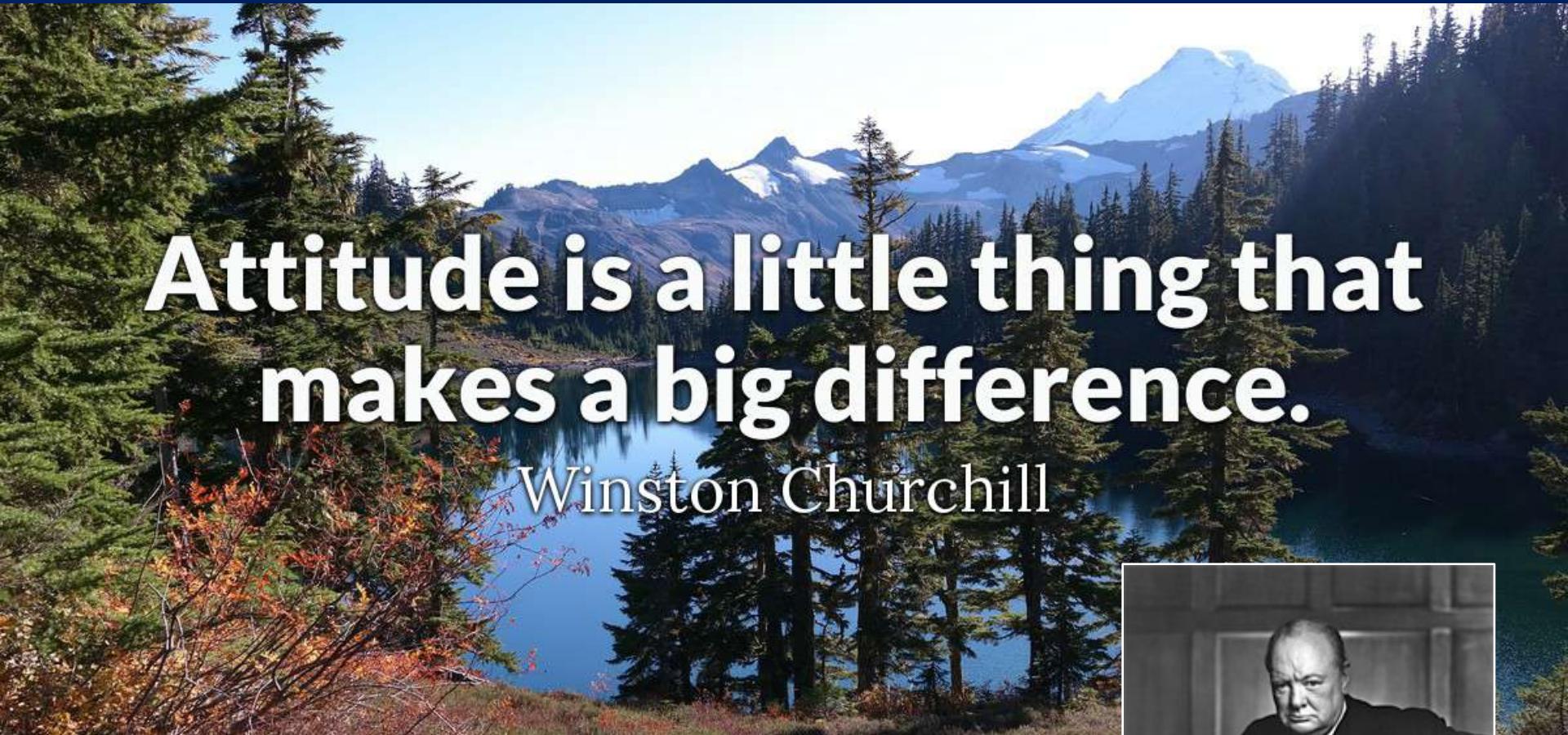
THINK

1. Identify an example of an “attitude” – positive or negative - you are personally familiar with

PAIR, SHARE...

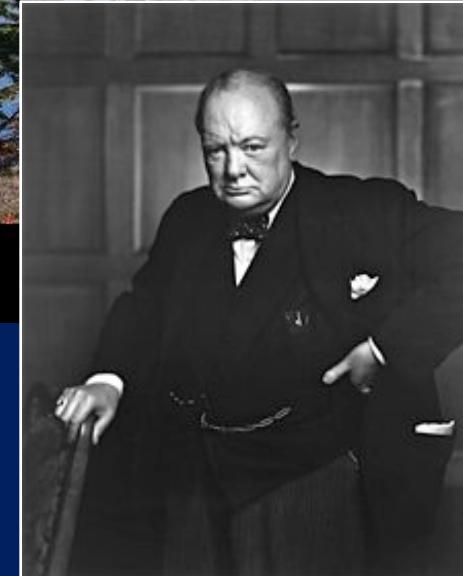
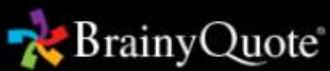
2. Meet the people around you (3 to 4 persons) and discuss your ideas.
3. Consider how this attitude might manifest itself in engineering work. Come up with an illustration (positive or negative)

Be prepared to share your answers (5 minutes).



**Attitude is a little thing that
makes a big difference.**

Winston Churchill



attitude [at-i-tood, -tyood]

manner, disposition, feeling, position, etc., with regard to person or thing; tendency or orientation, especially of the mind

Synonyms

- approach
- belief
- bias
- character
- demeanor
- mindset
- mood
- notion
- opinion
- perspective
- philosophy
- point of view
- position
- posture
- prejudice
- reaction
- sensibility
- sentiment
- stance
- stand
- temperament
- view

Antonym... fairness

<https://www.thesaurus.com/>

DEFINITION OF “ATTITUDES”

- Attitudes refer to the “ways in which one thinks and feels in response to a fact or situation.” BOK2
- “Attitudes [are] learned predispositions to respond in a consistently favorable or unfavorable manner.” BOK3

INTENTION OF “ATTITUDES”

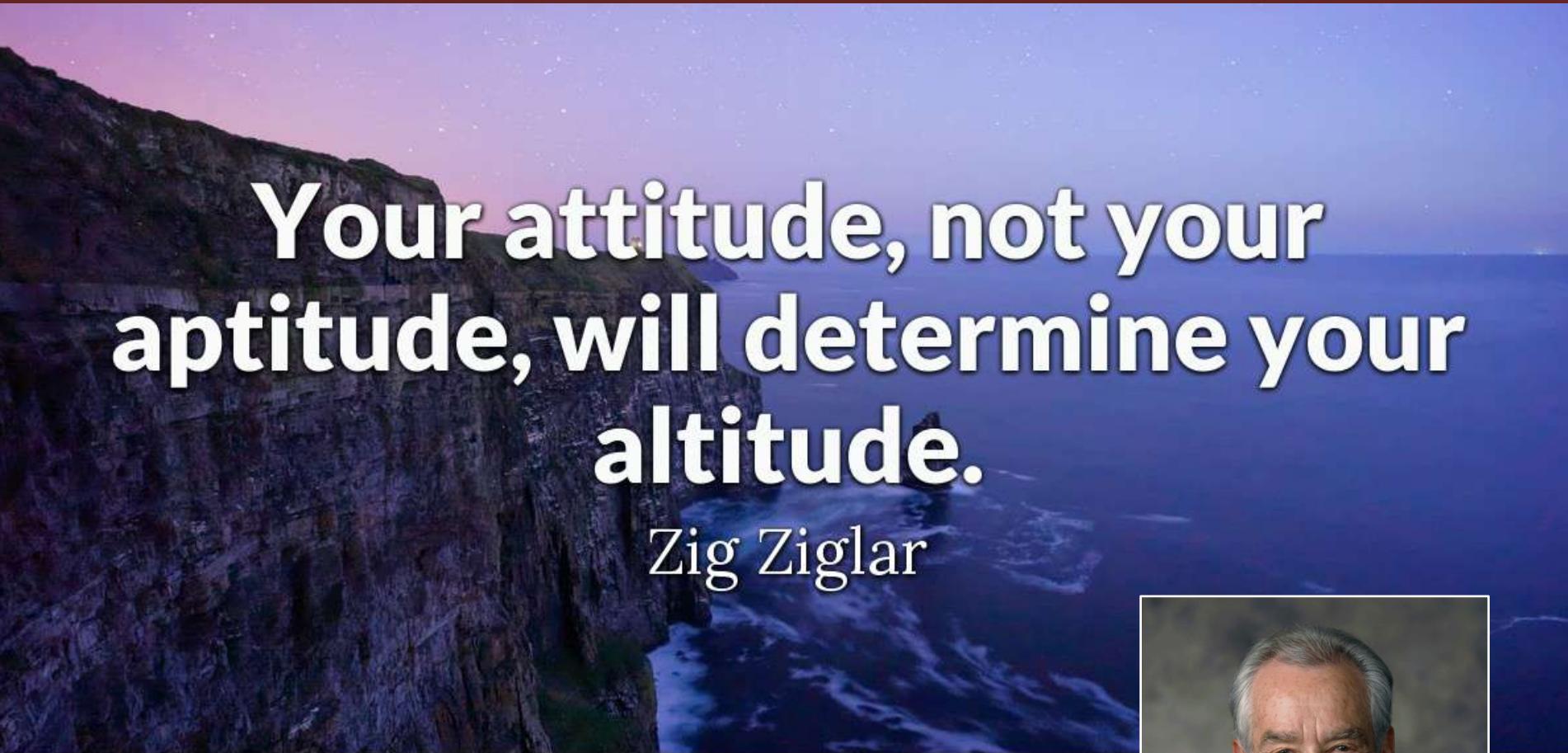
- At the professional level, one’s attitudes will affect how knowledge and skills are applied to the solution of a civil engineering problem. BOK2
- “Professional attitudes are the positive and constructive attitudes that a civil engineer should display.” BOK3

Q1. FROM WHERE DO WE GET OUR ATTITUDES?

WHY ATTITUDES?

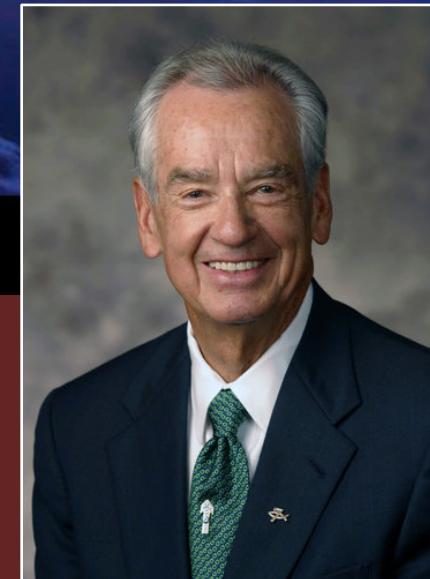
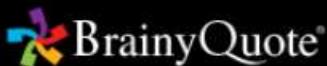
ATTITUDES

PROFESSIONAL ENGINEERING PRACTICE ISSUES



Your attitude, not your aptitude, will determine your altitude.

Zig Ziglar



Why Attitudes for Civil Engineers? BOK2

1. A wealth of study and professional opinion points to the importance of attitude in individual and group achievement.
2. Teaching of attitudes is an integral part of educational practice.
3. Attitudes are an integral part of the BOKs of other professions and specialties such as architecture, accounting, and law.

Why Attitudes for Civil Engineers? вокз

1. Positive professional attitudes create a more effective and pleasant workplace.
2. Perceptions of civil engineers may be enhanced by exhibiting positive attitudes, which may also lead to better career opportunities for civil engineers.

Q2. DO YOU THINK OUR ATTITUDE MATTERS? WHY OR WHY NOT?

THEORY

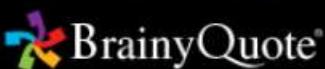
ATTITUDES

PROFESSIONAL ENGINEERING PRACTICE ISSUES



If you don't like something,
change it. If you can't change it,
change your attitude.

Maya Angelou

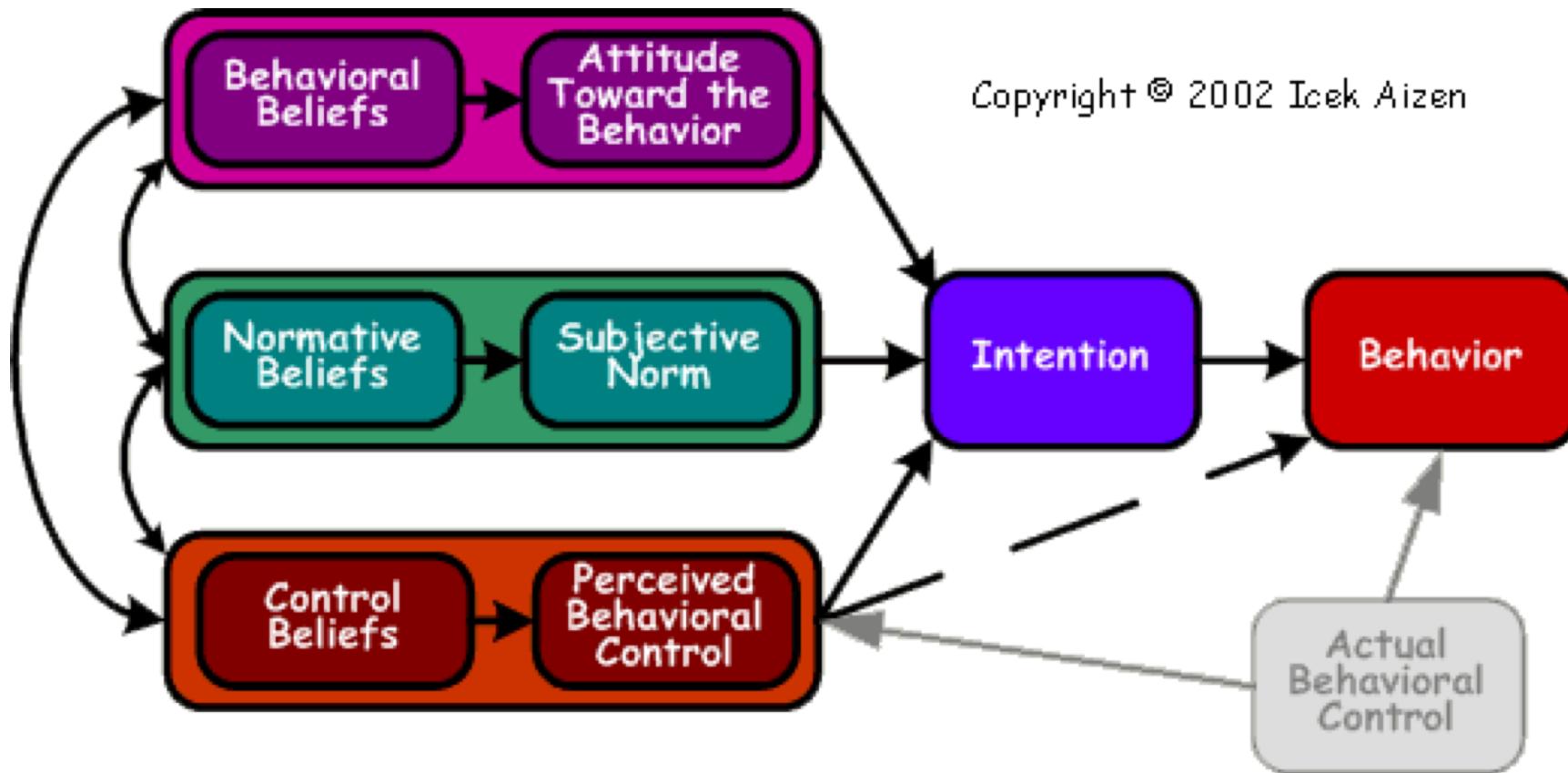


THEORY OF PLANNED BEHAVIOR/ REASONED ACTION

- Theory of Reasoned Action suggests that a person's behavior is determined by his/her intention to perform the behavior and that this intention is, in turn, a function of his/her attitude toward the behavior and his/her subjective norm.



ICEK AJZEN



Copyright © 2002 Icek Ajzen

Source: Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50, p. 179-211.

Core Assumptions and Statements

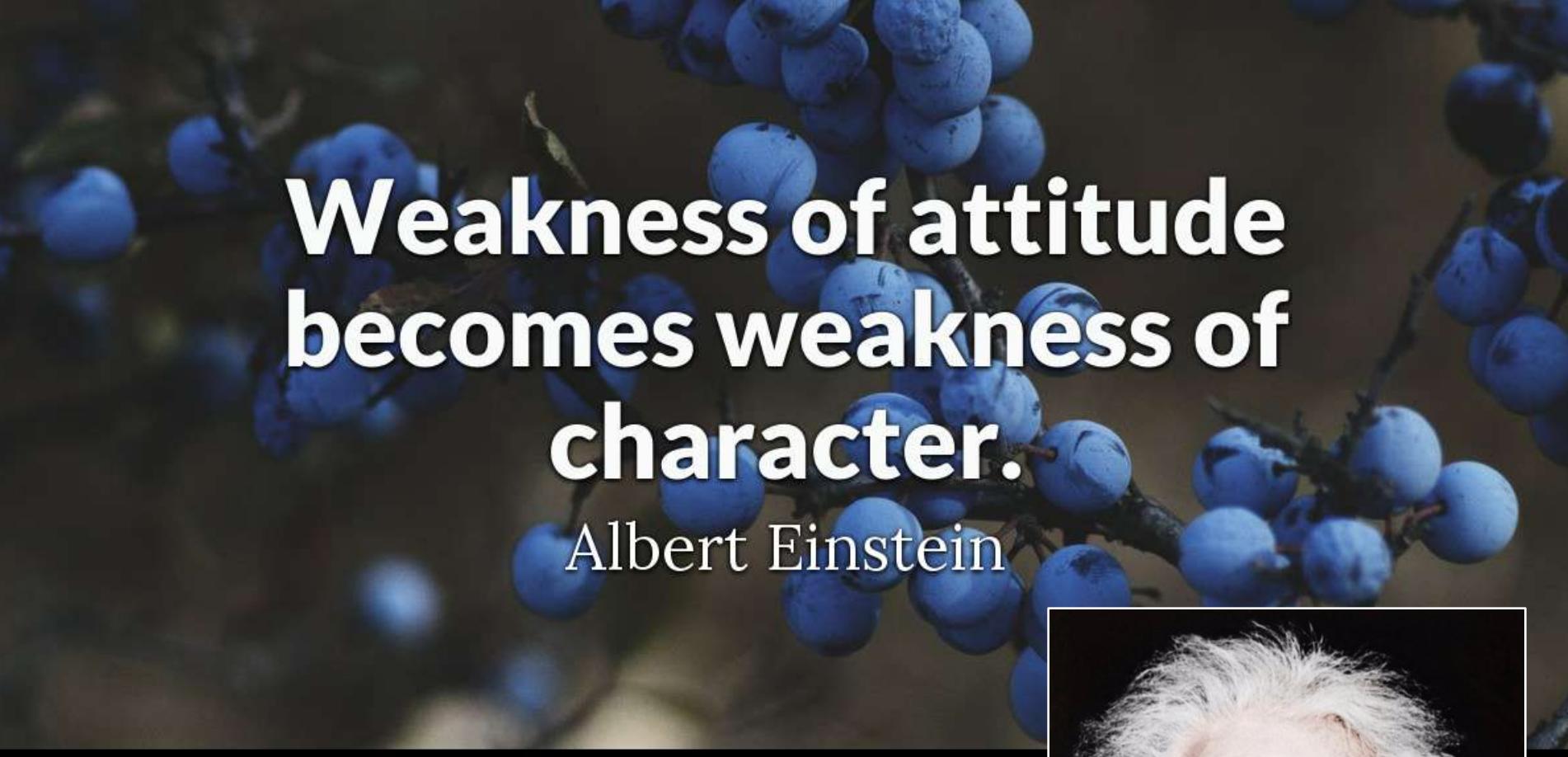
Theory of Planned Behavior/ Reasoned Action

- The best predictor of behavior is intention. Intention is the cognitive representation of a person's readiness to perform a given behavior, and it is considered to be the immediate antecedent of behavior.
- This intention is determined by three things: their attitude toward the specific behavior, their subjective norms and their perceived behavioral control.
 - The theory of planned behavior holds that only specific attitudes toward the behavior in question can be expected to predict that behavior.
 - In addition to measuring attitudes toward the behavior, we also need to measure people's subjective norms – their beliefs about how people they care about will view the behavior in question. To predict someone's intentions, knowing these beliefs can be as important as knowing the person's attitudes.
 - Finally, perceived behavioral control influences intentions. Perceived behavioral control refers to people's perceptions of their ability to perform a given behavior.
- These predictors lead to intention. A general rule, the more favorable the attitude and the subjective norm, and the greater the perceived control the stronger should the person's intention to perform the behavior in question.

WHICH ATTITUDES?

ATTITUDES

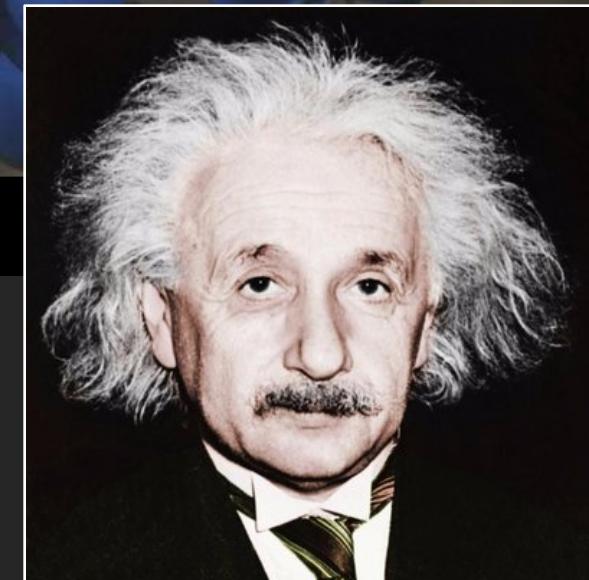
PROFESSIONAL ENGINEERING PRACTICE ISSUES



**Weakness of attitude
becomes weakness of
character.**

Albert Einstein

 BrainyQuote®



Attitudes that support the effective practice of civil engineering... BOK2

An exhaustive list of appropriate attitudes would be difficult to compile. A partial list ...might include:

- Commitment
- Confidence
- Consideration of Others
- Curiosity
- Fairness
- High Expectations
- Honesty
- Integrity
- Intuition
- Good Judgment
- Optimism
- Persistence
- Positiveness
- Respect
- Self-esteem
- Sensitivity
- Thoughtfulness
- Thoroughness
- Tolerance

Attitudes that support the effective practice of civil engineering... BOK3

Professional attitudes encompass a range of elements including

- Creativity
- Curiosity
- Flexibility
- Dependability

Other professional attitudes ...may include

- Commitment
- Confidence
- Empathy
- Entrepreneurship
- Fairness
- Honesty
- Integrity
- Optimism
- Persistence
- Respect

Key Professional Attitudes... BOK3

- **Creativity**... is the ability to make new things or form new ideas and is needed to solve complex civil engineering problems that do not have obvious solutions
- **Curiosity**... is the urge to know about something and is essential for the civil engineer to gain new knowledge and to be more creative
- **Flexibility**... is the ability to change or be changed according to the situation and is critical for civil engineers to work within a diverse group and in an ever changing environment
- **Dependability**... is defined as the quality of being able to be counted on or relied upon and is an attitude civil engineers should display

LEARNING EXERCISE

ATTITUDES

PROFESSIONAL ENGINEERING PRACTICE ISSUES

Key Professional Attitudes... ВОК3

- Creativity...
- Curiosity...
- Flexibility...
- Dependability...

Application 3.2

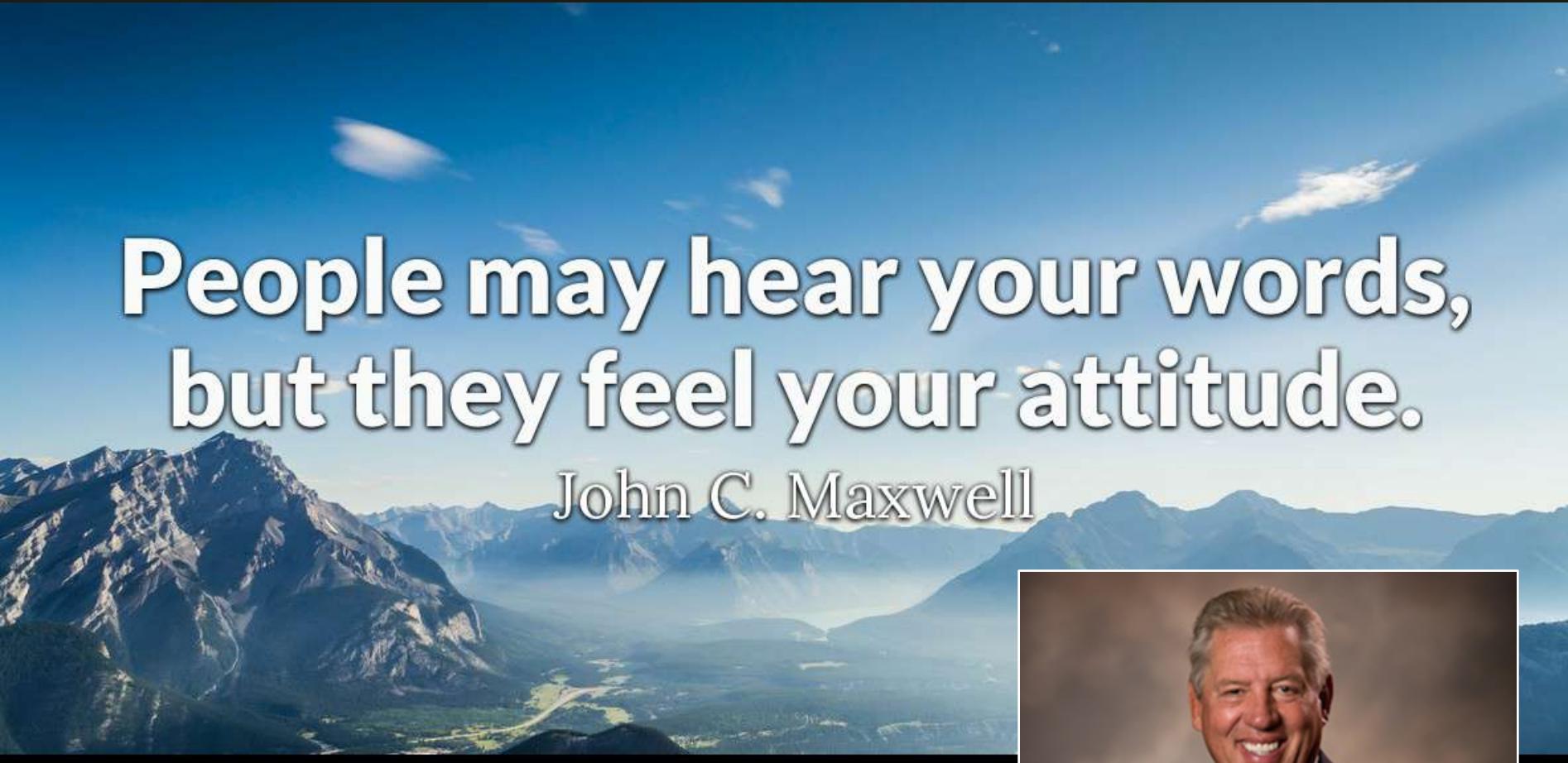
Explore the professional attitudes of creativity, curiosity, flexibility, dependability



Attending the WCOE Job Fair on FEBRUARY 16?

Consider....

- *What positive professional attitudes do you hold?*
- *How might you communicate these to a prospective employer?*
- *Can you think of examples? Illustrations?*



**People may hear your words,
but they feel your attitude.**

John C. Maxwell



SUMMARY

ATTITUDES

PROFESSIONAL ENGINEERING PRACTICE ISSUES

QUESTIONS?

CE 4200

PROFESSIONAL ENGINEERING PRACTICE ISSUES



The only disability in life
is a bad attitude.

Scott Hamilton

 BrainyQuote®