Chapter 5
Shifting to Online Learning Through Cognitive Flexibility

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ABSTRACT
The chapter presents a review of the approaches to cognitive flexibility as an ability, behaviour, and executive function in psychology and neuroscience. In education, it was used to develop cognitive flexibility theory, which is treated as a pedagogical tool to enhance learners’ information processing skills. The chapter also stresses the importance of cognitive flexibility in the context of transformation to distance learning in two universities of Russia and one in Turkey during the coronavirus pandemic in Spring-Fall 2020 when faculty members were forced to use flexible and creative solutions and approaches to resume the discontinued in-person learning online and maintain it.

INTRODUCTION
Human beings have the ability to behave flexibly, to go beyond simple carrying out a task, to reflecting on that knowledge and using that knowledge to approach new problems. (Spensley & Taylor 1999, p. 300)

Cognitive flexibility has been the focus of attention of psychologists since the second half of the 20th century and neural science, since recently. Its realization occurs on the mental and verbal levels encompassing language, imagination, perception and creativity. As a brain function, it is probably inborn, slowly develops in childhood along the natural and cultural lines, and fades with age; as a personality trait it matures over time, relates to emotional intelligence (regulation) and helps deal with stress/disease/
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crisis, etc.; as a linguistic skill or competence it is subject to purposeful development through a number of exercises, and as a behavioural strategy, it can be managed towards faster and easier achievement of goals and getting a reward.

Cognitive flexibility manifests itself on the levels of mental conceptual representations in images/schemas/scenarios, etc. and verbally in speech. It is engaged in the following cognitive processes: thinking, knowing, remembering, controlling, attention shifting, judging, associating, inhibiting irrelevant information, problem-solving, and adapting. The essence of cognitive flexibility lies in the prompt retrieval, selection, modification, combination, and application of the abovementioned cognitive processes to form mental representations (images and words) to achieve the desired outcome in the altered circumstances.

It also depends on social context which acts as a motivating/demotivating factor. Depending on the environment, people tend to be more or less flexible. If environmental stimulation is provided, they are more likely to engage in flexible behaviour. In times of crisis, people are forced to exploit their flexible cognition potential more actively. The reward then is understood as coping with stress, adaptation and comfortable existence in the new, changed, reality. In some situations, a person can exhibit flexibility and in others remain rigid.

In everyday life, cognitive flexibility is responsible for planning, multitasking, goal-oriented instead of habit-driven behaviour, adapting to changing demands, decision making by searching knowledge from different domains and processing information from multiple sources; understanding multiple and sometimes conflicting perspectives; finding new associations and seeing new relationships between objects, people, and events; rejecting the banal for the innovative e.g. repurposing known objects through seeing them in an unconventional way; word meaning activation and discourse/speech perception self-correction and dealing with mistakes. It is also linked with exerting control over unwanted, negative thoughts and emotions and ability to cope with stresses.

Cognitive flexibility in the situation of COVID-19 has come into the limelight. The rapid worldwide shift of all educational activities into the online format has changed the learning landscape and brought another agent onto the stage. If in the past centuries, the teacher and later the student were at the centre of the educational process, similarly during the period of distance learning, the digital environment becomes an active participant in education. In terms of university education, faculty members needed to use flexible and creative solutions and approaches to resume the discontinued in-person learning online and maintain it as efficiently as possible. Thus, in order to embrace these sudden changes in the teaching environment, having cognitive flexibility is of great significance as a trait that enables them to meet the cognitive demands of this dynamically changing educational landscape. The current situation showed that it was necessary to ease the process of transition both for the faculty and students. Therefore, cognitive flexibility has also become a must to adapt to online instruction.

THE CONCEPT OF COGNITIVE FLEXIBILITY

It is logical to begin with defining cognitive flexibility. According to the Dictionary of Psychology of the American Association of Psychology, “cognitive flexibility is the capacity for objective appraisal and appropriately flexible action. Cognitive flexibility also implies adaptability and fair-mindedness” (APA Dictionary). It refers to the ability to understand multiple and sometimes conflicting perspectives and representations (Jacques & Zelazo, 2005b); the ability to update behaviour and thought based on the needs of a constantly changing environment, an example of which can be “the ability to view a common
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