

## COVID-19 SPECIAL COLLECTION

### CASE STUDY: Innovation in curriculum development

# Trans-complex education as a strategy in pandemic and post-pandemic COVID-19

Juan Miguel González Velasco

Facultad de Ciencias Farmacéuticas y Bioquímicas/Faculty of Pharmaceutical and Biochemical Sciences, Universidad Mayor de San Andrés, Bolivia

#### Keywords

Education  
Self-learning  
Schools  
Student  
Bolivia

#### \*Corresponding author

[jmgonzales9@umsa.bo](mailto:jmgonzales9@umsa.bo)

**Summary:** The trans-complex approach to education changes the work of the teacher and faculty, in particular the social outlook and resilience of the student is tested with this new mode of self-learning and adaptation. The new proposed form of education involves the application of a non-physical classroom, immersed in a creative and constant flux of complexity and trans-disciplinary processes; this is the social classroom born of the Trans-complex Educational Theory in response to the pandemic and post-pandemic phase of COVID-19. This case study will focus on the challenges to institutions, teachers and students, and relates to the struggle with acquiring new and complex skills. These struggles can be addressed using 'R3 Education' which promotes 'Reinvention', 'Realignment' and 'Resilience'. The emergence of a responsive approach to curriculum design is now here - the trans-complex curriculum.

#### Background and Context

Education is a metacognitive process, and in deciding to follow lockdown rules to protect the health needs of students and faculties, education now must also address the need to promote self-learning in a multi-dimensional way. The global community will not return to 'normal' for several years, perhaps even decades. The pandemic has been an acute awakening for humanity, reflecting the great vulnerability of societal health and the inability to prevent and recover quickly from global health emergencies.

Educational systems should be able to strategically contribute to the smoothing out of the contagion curve in both direct and indirect ways; pedagogical and andragogic processes should be capable of generating processes that can metamorphosise in the face of health crises. The global population has shifted to a focus on self-learning and self-management of health. To adjust to this, face-to-face educational processes are undergoing a paradigm shift, where the student is no longer visible, but has been virtualised.

Moreover, the educational reality created by this pandemic, must be analysed which has impacted lecturers, professors, teachers, students, authorities and educational institutions.

In this brief case study, the author will examine the impact on institutions, teachers and students, explore some possibilities of these new scenarios and finally the growth of complex skills needed for successful virtual education (González, 2017a).

#### Educational Description

Grounded theory (Glaser, & Strauss, 1967) was applied for the development of the concept of Trans-complex Education R3 from the analysis of scientific texts of COVID-19.

#### Institutional challenges

Following the outbreak of the global pandemic, institutions have become highly visible and often critiqued by the media, governments and the general population. The motivation of students has taken a great hit from not being physically in a

learning environment and not having regular academic activity. Another challenge has been the social response of educational institutions to the pandemic, very often different in a public or private situation, and finally the administrative and economic factors of internal and external obligations that have continued during this period.

#### **Teachers' challenges**

The paramount challenge is the fall in motivation of both students and teachers. Teachers are affected by not having the students physically present, with the loss of educational settings and contexts adversely affecting both. Planning and didactics in virtual learning need longer structuring times and new ways are needed to reach students, which must consist of more than being in front of a computer.

#### **Students' challenges**

The most important challenge faced by students are the loss in intrinsic and extrinsic motivation; being away from their school or institution; and when students' new study space is disrupted by family crises. These challenges are married to the isolation caused by lockdown that manifest in biological and psychological way. Being confined leads to various levels of stress and anxiety, the latter can become very complicated depending on the setting where the student is and the length of time of confinement. A great challenge for the educational system in each country is presuming all students have the same level of digital literacy, the same access to the Internet and the same access to a reliable computer or cell phone. This is a barrier rooted in social inequality and has the potential to even be discriminatory.

Being at home for several days or even weeks can lead to students developing a sedentary lifestyle, not practicing any sport and reduced levels of sunlight. The lack of adequate learning environments is another important issue, since the home environment can in many cases be adverse, with parents in roles of teachers covering multiple disciplines or conversely absent parents more concerned about the health emergency situation. Finally, the human body manifests these difficult environments as both physical and mental fatigue.

#### **Outcomes and Recommendations**

Educational institutions must remember that the home, the family and the contexts that the lockdowns are spent in are key. There are tools present in each home such as music, the practice of some sports, art, and reading. All of these home activities should be considered when planning tasks given during confinements, as they may become permanent and common practice in the post-pandemic phases.

From this analysis, it has been possible to find solutions to improve the educational processes emerging from this new paradigm. The necessary skills for successful learning frameworks in virtual teaching mainly involve the use of the

social mind classroom as trans-complex strategies that allow students to exploit all of their abilities (González, 2015).

Furthermore, the rigid structure of the curriculum has had to adopt a greater degree of plasticity during the pandemic, as courses have had to rapidly adapt to the changing conditions. The curriculum has had to become trans-complex, growing into a more trans-disciplinary structure in this new paradigm (González, 2017b).

#### **References**

- Glaser, B. & Strauss, A. (1967) *The discovery of Grounded Theory: Strategies For Qualitative Research*. Aldine Publishing Company, Chicago, USA.
- González, J. (2015). *Religaje Educativo*. La Paz: Jivas. La Paz, Bolivia
- González, J. (2017a). *Teoría Educativa Transcompleja*. La Paz: Prisa, Bolivia
- González, J. (2017b). *Aula Mente Social*. La Paz: Imprenta Prisa. Ltda, Bolivia