2

Self Determination Theory (SDT) in the analysis of ICT skills in Pedagogy

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Abstract

Self Determination Theory (SDT) has been widely applied to optimize student learning in the face-to-face context (Ryan & Deci, 2017, 2020), however, it has been overlooked in online learning research. (Chen & Jang, 2010; Hsu et al., 2019). Ryan & Deci (2020) suggested that future SDT research should look more closely at how technologies in e-learning and remote classrooms motivate student engagement and learning. With the advent of the COVID-19 pandemic and its effect on the education sector, there has been a shift from physical to online class interaction. This came as a result of a massive closure of educational institutions that pressurized educators to learn new skills in ICT to sustain the new model of online teaching from the wider perspective of the theory. The SDT theory has been employed in several studies on the use of ICT skills in teaching. However, its use in the analysis of ICT skills in the teaching of French as a Foreign Language is very different. This chapter engages the SDT theory and its application in the analysis of the relationship between ICT skills and pedagogy based on the tenet that people are driven by three innate and universal psychological needs namely Competence (feeling competent and effective); autonomy (feeling self-governed and self-endorsed) and relatedness (feeling connected, loved, interacted) and that personal wellbeing is a direct function of the satisfaction of these needs (Deci& Ryan, 1991; Ryan 1995).

Keywords: Self Determination Theory, Pedagogy, ICT skills.

Introduction

Self-determination is a person's ability to manage themselves, make confident choices, and think on their own (Deci, 1971). Self-determination theory (SDT), proposed by Deci and Ryan (1985), is a macro-level theory of human motivation that aims to explain the dynamics of human need, motivation, and well-being within a social context. It has a large impact on motivation since it makes the person responsible and culpable for whichever outcome. The theory thrives on two key assumptions:

i. The need for growth drives behavior: People are always seeking to grow and improve (Deci & Ryan,1985). Gaining mastery over challenges is essential for developing a sense of self or a cohesive one.

ii. Autonomous motivation is important: SDT focuses on intrinsic sources of motivation such as learning to gain independence and wanting to prove oneself.

The theory suggests that people are driven by three innate and universal psychological needs namely Competence (feeling competent and effective); autonomy (feeling self-governed and self-endorsed) and relatedness (feeling connected, loved, interacted), and that personal well-being is a direct function of the satisfaction of these needs (Deci & Ryan, 1991; Ryan 1995). This needs either move individuals to act or not to act. When these three psychological needs are met, individuals experience greater psychological well-being and on the contrary feel highly fragmented, isolated, and reactive when their needs are not met.

SDT and the analysis of ICT skills in the teaching of French as a Foreign Language during the Corona Pandemic in universities in Kenya.

The advent of the Covid- 19 pandemic in Kenya and the world at large, gave rise to an abrupt shift from the usual face-to-face interaction between teachers and students to an

online mode of interaction. This led to an urgent need for ICT skills to enable learning. Teachers and learners at various educational levels were caught up in the dire need for ICT skills for learning to continue. Universities in Western Kenya were among the institutions that were caught up in this state, especially with the teaching of French as a foreign language. To analyze this scenario, the SDT theory was applied based on the three intrinsic psychological needs. When pedagogical design adequately addresses these psychological needs, students are actively motivated to engage in learning tasks (Hsu et al., 2019). Classrooms that support these three psychological needs are more likely to engage students in learning (Reeve, 2013).

Competence and Self-efficacy of FFL lecturers and students on the use of e-learning technology in Kenyan universities

Competence is the ability to interact effectively with effective skills needed for the achievement of one's goals. A competent person has sufficient qualities to perform a task (Garrido, 2021).

This theory can be used to establish levels of self-efficacy of teachers and lecturers regarding the use of online learning technology. Based on the three teacher support dimensions distinguished in SDT for classroom practice namely autonomy support, structure, and involvement (Lietaert et al., 2015; Roorda et al., 2011), the theory can be used to establish the levels of training of teachers and lecturers This may involve:

i. If teachers and lecturers have been trained on the use of ICT skills in teaching, setting and marking students' work.

ii. Whether the training needed hands-on experience and the availability of equipment on the ground. The kind of equipment to be assessed include the desktops in institutions, the laptops owned by the students and lecturers, and the

smartphones owned by the students. Wasike et al (2021) opined that the use of smartphones was an added advantage to the acquisition of both oral and written competencies among FFL learners. This paper points to the fact that learning opportunities offered by smartphones can improve learning at universities. The looming challenge is, however, the abuse of social media. This could pose a challenge to online teaching as students spend most of their time chatting with friends and face booking rather than learning when they are online.

iv. The training of learners in ICT competencies is another aspect to be assessed. Generally, institutions tend to focus the training on general ICT competencies rather than delving into specific skills in various technical and special subject areas. There is, therefore, need for a more specialized training on ICT not only for FFL but also in other subject areas for lecturers and students to achieve desirable levels of efficacy.

Competency levels of students and lecturers are therefore affected by factors such as specialized ICT training for learners, ICT training and refresher courses for lecturers and availability of ICT equipment.

Relatedness and needs-based support in the ICT teaching and Learning process of FFL during the COVID- 19 pandemic

The relatedness aspect of SDT is useful in the analysis of needs-based support on student motivation. A study on the use of ICT in the analysis of the teaching-learning process of FFL during the covid-19 pandemic was used to analyze the effects of needs-based support on student motivation, engagement, and learning.

In a bid to establish how University administration and ICT infrastructure in Kenyan universities supported the FFL teaching and learning process during the COVID-19 pandemic, relatedness as an intrinsic psychological need was

applied. Relatedness is the need to have close affectionate relationships which give individuals a sense of both attachments and belonging to other people. It is enhanced when individuals are respected and cared for by others. (Garrido, 2021). This principle was used to assess the needs-based support accorded to lecturers and learners of FFL by the university administration and ICT infrastructure. The prominent question in this study, therefore, was whether Kenyan students and lecturers of FFL at universities are sufficiently prepared to undertake online learning to come up with appropriate measures to bridge the existing gap.

In one of the universities, a study established that most classes were physical due to lack of the ICT support equipment. There was a lab for FFL teaching, but it was not functional due to damaged equipment. The large population of students with classes up to 50 could not be accommodated. While the ICT technicians were expected to give support, they lacked competencies in the French language.

Besides, most FFL learners did not have access to laptops and desktop computers. Instead, they relied on smartphones to help them attend virtual classes. It is the responsibility of the institution rather than the learner to provide sufficient desktop computers to learners.

The other two assumptions of the theory were important. How the need for growth drives behavior and the importance of autonomous motivation. Gaining mastery over challenges and taking in new experiences are essential for developing a cohesive sense of self and behavior. This was depicted in the manner in which students used more ICT time on personal work as depicted in table 3. The use of the phone has hence become an important part of the students' routine.

Secondly, autonomous motivation is important. While people are often motivated to act by external rewards such as money prizes and acclaim. Self-determination theory focuses on internal sources of motivation such as the need to

gain knowledge or independence. The respondents in one study expressed the need for ICT as a necessary skill in the teaching and learning of FFL. This was an indication of an intrinsic urge among them to use ICT pedagogy. "We live in a technological world and much of the linguistic resources needed for teaching FFL are found online", reiterated one of the respondents. The respondent also added that some topics in FFL can only be delivered using ICT software. As a result, most learners have purchased smartphones which are used to obtain online content and attend online classes whenever they are offered.

The scenario shows that students lack the necessary devices for online learning. However, a number use the smartphone. This concurs with the view of Trucano (2013), that the best technology is the one you already have, know how to use and can afford. This calls for institutional support for learners by putting in place measures and equipment for online learning.

Deci & Ryan (1985), suggest that the social environment can either help or hinder a self-determined perspective. Strong social support offers opportunities for growth while poor relationship leads to a poor sense of help and weak motivation. In this regard, institutions need to put measures in place to support learners and lecturers to achieve the required standards of ICT performance. Support has been witnessed in the teaching of French as a foreign language in many non-Francophone countries. Institutions receive a lot of support from the French embassy through funding and the purchase of instruments from donors. Technological support can also be given to students, teachers and lecturers by way of the provision of skills by technical staff in the institutions.

On this basis, various areas need to be assessed to ascertain the support available. These include the support available to technical staff in the ICT department and other technical areas.

Support needs to be given to students to enable them to access the online teaching platforms. Though there could be content on the online teaching platforms, some learners are unable to access the content.

For the various linguistic areas, there is need to acquire equipment specific to the teaching of the various languages. In a study conducted to assess the ICT skills gaps in the teaching of French, it was established that none of the technicians knew the French Language. The study also established that there was no equipment specific to the teaching of French. In all institutions, there were no French courses taught on the online platform (Auma et al., 2022)

Autonomy and Student engagement dimensions in SDT

Autonomy is the need to feel self-governing and independent. It is depicted in participants' engagement activities. Student engagement refers to students' active involvement in educationally effective practices and their commitment to educational goals and learning and is an essential path to highly valued educational outcomes (Christenson et al., 2012). Its four dimensions include behavioral, cognitive, emotional, and agentic.

Behavioral engagement refers to how involved students are in learning activities in terms of attention, participation, effort, intensity, or persistence (Christenson et al.2012). Student engagement in ICT programs for FFL learning was minimal. The study established that some students had smartphones but did not use them in the learning of FFL. They cited an unstable university network, a pointer to the fact that there was the need to provide a proper network to the learners and lecturers as a way of supporting them. When online, most learners spend very little time learning about FFL. Most of their online time was spent chatting with friends on social media. A number were also not aware of the online resources for learning FFL

Cognitive engagement refers to how much mental effort students spend in completing learning tasks in terms of using sophisticated rather than superficial learning strategies. Emotional engagement refers to the feelings students have towards teachers, peers, learning activities, and school experience, as well as their sense of belonging (Sinatra et al., 2015).

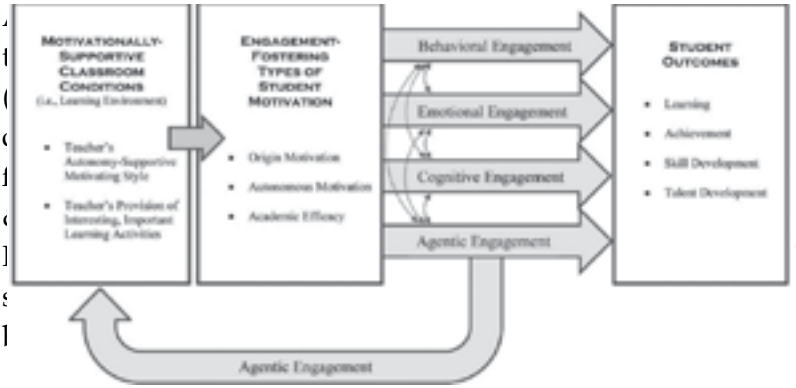

Figure 1: Four Interrelated dimensions of student engagement adopted from Reeve, 2013

Despite being interrelated, these dimensions are operationalized and conceptualized as distinct (Christenson et al., 2012; Reeve, 2013; Sinatra et al., 2015) (Figure 1).

Acts of agentic engagement are qualitatively distinct from the other three dimensions in that they are proactive, planned, and collaborative ways for teachers to engage in learning activities. If agentic engagement contributes to a more supportive learning environment (e.g., greater autonomy support, more valued activities), the learning environment will be beneficial to student motivation, which is conducive to energized, direct, and sustained student engagement. The study is in itself an agentic engagement. The development of an online FFL learning model in the

second phase of this study aims at contributing to a more supportive learning environment. Besides, the study propagates agentic engagement by advocating for a more supportive environment. Lectures should be more supportive to the learner by engaging a more qualified technical staff. The technical staff should be that which is well acquainted with FFL competency skills. To achieve this institutional support is needed. The institutional support required bears various factors at play. The motivation of students, lecturers and technical staff is key. Others include the provision of connectivity and procurement and maintenance of available equipment.

Student motivation and engagement are influenced by various contextual factors, such as teacher and peer support (Lietaert et al., 2015). Teacher support is one of the most important factors, as teachers play a crucial role in fostering student motivation in schools (Allen et al., 2013; Roorda et al., 2011; Wang & Eccles, 2012). Likewise, institutional support becomes a major factor in providing a conducive learning environment for both the teacher and the student.

Conclusion

The SDT theory, therefore, offers a basis for the analysis of ICT skills in the teaching of FFL in Kenyan Universities during the Covid-19 pandemic. Based on the Competence, relatedness and autonomous intrinsic psychological needs, it depicts the teacher/ learner self-efficacy, institutional support and the learner's engagement in the learning process. The underlying factor is that intrinsic motivation is key in helping individuals achieve their targets.

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