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SUMMARY / TABLE DES MATIÈRES

Coordinator of the thematic number

Mihaela Aurelia ȘTEFAN, Associate Professor, PhD,
University of Craiova, Romania

INTRODUCTION / INTRODUCTION

This volume is dedicated to number 45(2), *Supplement*, for the year 2023 of the journal *Annals of the University of Craiova, Psychology – Pedagogy series*, edited under the aegis of the Teacher Training Department, respectively of the Centre for Psycho-Pedagogical Research, which works within this department.

The current number integrates into the theme of the journal, which approaches topics from the field of educational sciences, psychology, social sciences, special didactics, in an inter-, multi- and transdisciplinary manner.

This volume is focused on the contributions of university teaching staff, researchers and PhD students interested in the topic Education and school in the post-pandemic era, more precisely on various aspects, trends, directions of education and school in the post-pandemic era: the integration of neuroscience in the digitization of education; accompaniment for newly recruited teachers in the post-pandemic classroom; the impact of distance learning on the teaching of proportionality among teachers; hybrid FLE teaching in the midst of the COVID-19 pandemic; teaching in the age of chatbots: the example of ChatGPT; the hybridization of university courses in the post-pandemic period; exploring the learning experiences of university students during the pandemic; reconsideration of learning theories from the perspective of their approach in the virtual environment; effective learning in the real and virtual classroom; digital platforms used in academic learning in the post-pandemic period; creative teaching.

Other studies deal with topics related to the emotional well-being of the learners as a determining factor of the training activity; providing inclusive education for deaf students in the post-pandemic university context.

Regardless of the themes addressed, the studies offer a glimpse of certain contemporary social and educational realities, offering the chance to subject to analysis and reflection various aspects, trends, directions of education and school in the post-pandemic era, to disseminate the results of the research carried out in the field of educational sciences and psychology.

The journal is indexed in the ERIH PLUS, Directory of Open Access Journals (DOAJ), Central and Eastern European Online Library (CEEOL), Index Copernicus, RePEc, Google Scholar, Directory of Research Journals Indexing (DRJI), WorldCat, Directory of Open Access Scholarly Resources (ROAD), SCIPIO and it is also included in 22 national and international libraries.

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IMAGERIE CÉRÉBRALE VS IMAGERIE COMPUTATIONNELLE : INTÉGRER LES NEUROSCIENCES DANS LA NUMÉRISATION DE L'ÉDUCATION*

Euphrosyne EFTHIMIADOU[1]

10.52846/AUCPP.2023.2suppl.01

Résumé

L'alliance entre les neurosciences et l'éducation promeut de mieux analyser le processus d'apprentissage et d'enrichir les pratiques d'enseignement pour le rendre plus dynamique et efficace. D'une part, les neurosciences cognitives s'intéressent à notre comportement et éventuellement à notre mémoire ainsi qu'à l'acquisition de nos savoirs et de nos réflexes selon quatre facteurs (attention, engagement actif, retour d'information, consolidation), qui déterminent la vitesse et la facilité d'apprentissage (Dehaene, 2012). D'autre part, les neurosciences émotionnelles, étudient les interactions entre le cœur et la raison s'orientant vers une nouvelle neurobiologie du sentiment et du comportement social (Damasio, 2017).

Avec la numérisation progressive du contexte éducatif à l'époque postpandémique, il serait essentiel de se demander d'une part, dans quelle mesure la mise en application de nouveaux outils de communication et de collaboration permet de conditionner notre perception et de stimuler la mémorisation. D'autre part, on pourrait se pencher sur la cognition sociale dans les interactions en ligne sans négliger l'influence exercée par les outils technologiques non seulement sur la manière de penser, mais encore sur notre équilibre mental. Enfin, il s'avère important de porter un regard sur l'avenir des neurosciences computationnelles et l'Intelligence Artificielle comme le Chatbot Generative Pre-trained Transformer (ChatGPT) et ou même le projet Cerebro, une méthode innovante pour l'imagerie de l'activité cérébrale en vue de faire le lien entre les neurosciences (qui permettent de comprendre le cerveau) et des stratégies concrètes (qui permettent d'aider à apprendre) (Brault Foisy, Masson, 2022, https://doi.org/10.26034/cortica.2022.1956).

Mots-clés : *Imagerie Cérébrale ; Neurosciences Cognitives ; Émotionnelles et Computationnelles ; Cognition Sociale ; Intelligence Artificielle ; Numérisation de l'Éducation.*

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BRAIN IMAGING VS. COMPUTATIONAL IMAGING: INTEGRATING NEUROSCIENCE INTO THE DIGITIZATION OF EDUCATION

Abstract

The alliance between neuroscience and education promotes better analysis of the learning process and enriching teaching practices to make it more dynamic and effective. On the one hand, cognitive neuroscience is concerned with our behavior and eventually our memory as well as the acquisition of our knowledge and reflexes according to four factors (attention, active engagement, feedback, consolidation), which determine the speed and facility of learning (Dehaene, 2012). On the other hand, emotional neuroscience studies the interactions between the heart and reason, moving towards a new neurobiology of feeling and social behavior (Damasio, 2017).

With the increasing digitization of the educational context in the post-pandemic era, it would be essential to consider, on the one hand, to what extent the implementation of new communication and collaboration tools makes it possible to condition our perception and stimulate memorization. On the other hand, we can get a look at social cognition in online interactions without neglecting the influence exerted by technological tools not only on the way of thinking but also on our mental balance. Finally, it is important to take a look at the future of computational neuroscience and Artificial Intelligence such as the Chatbot Generative Pre-Trained Transformer (ChatGPT) and even the Cerebro project, an innovative method for imaging brain activity with a view to linking neuroscience (for understanding the brain) and concrete strategies (for helping to learn) (Brault Foisy L.-M., Masson S., 2022, https://doi.org/10.26034/cortica.2022.1956).

Key words: *Brain Imaging; Cognitive; Emotional and Computational Neuroscience; Social Cognition; Artificial Intelligence; Digitization of Education.*

1. Introduction

A l'époque postpandémique, le domaine éducatif s'enrichit par l'intégration du numérique dans toutes les étapes de l'apprentissage. Sous cet aspect, de nouveaux outils de communication et de collaboration en ligne ont fait leur apparition dans le but de favoriser les échanges mutuels parmi les actants de l'éducation. Parallèlement, les récents progrès en informatique ont été pionniers en neuro-imagerie tout en creusant le domaine de neuro-informatique par l'innovation dans les techniques utilisées d'imagerie cérébrale. En effet, des technologies de plus en plus avancées permettent de gagner en résolution en vue d'analyser les mécanismes complexes du cerveau.

Les neurosciences ont creusé le contexte éducatif et visent à introduire de techniques variées en neuro-imagerie allant de la neuro-imagerie structurelle et fonctionnelle jusqu'à l'imagerie multimodale par l'intégration de techniques computationnelles. Ainsi, les progrès récents sur l'imagerie cérébrale permettent de détecter le mécanisme cérébral pour étudier le processus cognitif et, plus

spécialement, le rôle de la mémoire, mais aussi les réactions comportementales lors du processus d'apprentissage. Sous cet aspect, on va d'une part se demander dans quelle mesure les neurosciences cognitives s'intéressent à notre comportement et éventuellement à notre mémoire ainsi qu'à l'acquisition de nos savoirs et de nos réflexes selon quatre facteurs (attention, engagement actif, retour d'information, consolidation), qui déterminent la vitesse et la facilité d'apprentissage (Dehaene, 2012). D'autre part, on va aborder les neurosciences émotionnelles, afin d'étudier la place primordiale des émotions dans les tâches à entreprendre et, spécialement, les interactions entre le cœur et la raison s'orientant vers une nouvelle neurobiologie du sentiment et du comportement social (Damasio, 2017).

Vu que le décryptage du fonctionnement du cerveau se réalise à l'aide de techniques sophistiquées, on va se pencher sur les recherches originales en neuro-imagerie et en neuro-informatique, qui permettent de conditionner notre perception tout en stimulant la mémorisation. De plus, il ne faudrait pas négliger l'impact de la cognition sociale dans les interactions en ligne pour exercer une influence forte sur notre mentalité et sur notre équilibre mental. Enfin, on va s'interroger sur l'avenir des neurosciences computationnelles et de l'Intelligence Artificielle par la mise en application d'outils technologiques comme le Chatbot Generative Pre-trained Transformer (ChatGPT) et le recours à de nouvelles méthodes pour étudier l'imagerie de l'activité cérébrale comme le projet Cerebro tout en se penchant sur les neurosciences computationnelles dans le but de faire le lien entre les neurosciences (qui permettent de comprendre le cerveau) et des stratégies concrètes (qui permettent d'aider à apprendre).

2. Tracé historique des neurosciences : L'apport des recherches sur l'imagerie cérébrale

L'imagerie cérébrale s'intéresse à détecter le fonctionnement du cerveau et à analyser les mécanismes complexes dans le but d'évaluer les processus cognitifs mis en question. À partir des recherches réalisées dans les années 1970, les neurosciences ont connu un essor visant à la neuro-imagerie structurelle. C'est en 1990 que les recherches sur le cerveau connaissent une évolution, en vue de réaliser des tâches cognitives en neuro-imagerie fonctionnelle. Actuellement, des technologies de plus en plus avancées visent à mettre en œuvre une imagerie multimodale à l'aide de techniques computationnelles intégratives.

2.1. Imagerie cérébrale : Les différentes techniques de neuro-imagerie

Depuis 40 ans, de différentes techniques d'imagerie cérébrale ont été développées pour étudier le corps humain et les réactions comportementales. D'une part, en 1973, la neuro-imagerie structurelle permet d'étudier l'anatomie du cerveau et tout ce qui peut la perturber. « *Il faut prendre conscience du fait qu'avant les années 1990, l'exploration de l'activité cérébrale était essentiellement limitée à l'électroencéphalographie (EEG), qui repose sur la découverte faite par Hans Berger en 1929 de la possibilité d'enregistrer l'activité électrique spontanée du cerveau par de simples électrodes posées à la surface du crâne.* » (Sackur, 2014, p. 75). Dans les années 1990, la neuro-imagerie fonctionnelle rend compte de l'activité des zones

cérébrales durant certaines tâches cognitives en vue de visualiser les différentes structures cérébrales et d'observer leur fonctionnement et leurs interactions.

Les études en neuro-imagerie utilisent soit des rayonnements (émission de rayons X, détection de produits radioactifs injectés), soit la mesure de l'activité électrique ou, plus récemment, des champs magnétiques. En effet, l'analyse du fonctionnement du cerveau se sert de différentes techniques très utilisées en sciences cognitives comme l'électro-encéphalographie (EEG), qui mesure les ondes électriques reflétant l'activité du cerveau. En effet, *« en 1990 Ogawa et ses collaborateurs faisaient inhaler un air saturé en CO2 à des rats pour modifier la concentration en oxygène de leur sang cérébral. Seulement trois ans plus tard, Le Bihan et ses collaborateurs utilisaient le même contraste BOLD pour montrer qu'imaginer et voir un même stimulus visuel modifiait de manière similaire l'activité du cortex visuel occipital. »*. (Sackur, idem). C'est ainsi que l'imagerie par résonance magnétique fonctionnelle (IRMf), qui mesure les variations spatio-temporelles en étudiant l'activité des zones cérébrales durant certaines tâches était née. D'autre part, la Magnétoencéphalographie (MEG) a l'intention de mesurer des champs magnétiques dus à l'activité électrique des neurones et permet de visualiser les structures profondes du cerveau de façon plus précise que l'imagerie par résonance magnétique fonctionnelle (IRMf) (https://www.frm.org/nos-publications/innovation-et-sante/imagerie-cerebrale-percer-les-mysteres-du-cerveau).

Actuellement, des technologies de plus en plus avancées réussissent à gagner en résolution et à analyser des mécanismes complexes. Grâce aux récents progrès en informatique, de nouvelles techniques d'imagerie comme l'imagerie par résonance magnétique de diffusion (IRMd) permettent de réaliser des méthodes d'analyse d'images complétée par une infrastructure d'analyse de données à grande échelle en visualisant des structures microscopiques du cerveau.

En prospective, des progrès récents permettent de décrypter le dysfonctionnement de certains neurones du cerveau et de relever de nombreux défis par le recours à l'imagerie multimodale et aux techniques computationnelles intégratives qui y sont associées, au cœur de cette révolution (https://www.mcgill.ca/neuro/fr/recherche/groupes-de-recherche/neuro-imagerie-et-neuro-informatique).

2.2. Neurosciences et apprentissage

Les neurosciences ont fait leur entrée dans le domaine de l'éducation. Cette association neurosciences/éducation vise à créer un cadre conceptuel et méthodologique commun pour soutenir les systèmes scolaires qui souhaitent intégrer les neurosciences dans leur pratique d'enseignement.

D'une part, l'imagerie cérébrale est utilisée à des fins de recherche fondamentale pour observer les zones du cerveau impliquées dans la mise en place du langage chez les jeunes enfants (MEG). D'autre part, elle permet de mieux comprendre l'ensemble des mécanismes de la mémoire. *« L'imagerie cérébrale nous a permis, par exemple, de mieux comprendre l'ensemble des mécanismes de la mémoire et cette connaissance peut aider les enseignants à modifier ou à adapter leur enseignement pour que les élèves mémorisent mieux. Il semble donc très important que les neuroscientifiques et les enseignants collaborent sur ces*

connaissances nouvelles pour qu'ensemble, ils travaillent sur la transposition des résultats des IRM en compétences didactiques et pédagogiques » (Toscani, 03/10/2016, https://www.schooleducationgateway.eu/fr/pub/viewpoints/experts/the-neurosciences-and-learning.htm).

Grâce aux techniques utilisées telles que l'imagerie par résonance magnétique (IRM), qui permettent de voir en image le cerveau en situation réelle d'apprentissage, les neuroscientifiques peuvent aider les enseignants à mieux comprendre les processus d'apprentissage. Ainsi, les connaissances neuroscientifiques liées au développement du cerveau peuvent non seulement orienter les enseignants, mais aussi enrichir les pratiques d'enseignement.

3. Les neurosciences cognitives : Étude du comportement et du rôle majeur de notre mémoire

« Les sciences cognitives sont définies comme un ensemble de disciplines scientifiques visant à l'étude et à la compréhension des mécanismes de la pensée humaine, animale ou artificielle, et plus généralement de tout système cognitif, c'est-à-dire tout système complexe de traitement de l'information capable d'acquérir, de conserver et de transmettre des connaissances. » (Centre d'analyse stratégique, 2010). Les Sciences Cognitives s'intéressent à étudier la description, l'explication et la simulation des mécanismes de la pensée humaine comme la perception, l'intelligence, le langage, la mémoire, l'attention, le raisonnement, les émotions ou même la conscience. Elles sont composées de six (6) sous-disciplines : les neurosciences, la linguistique computationnelle, l'anthropologie cognitive, la psychologie cognitive, la philosophie de la cognition et l'intelligence artificielle.

3.1. Acquisition de nos savoirs et de nos réflexes selon quatre facteurs : a. attention, b. engagement actif, c. retour d'information, d. consolidation

« Les neurosciences cognitives cherchent à établir des liens entre le système nerveux et la cognition (langage, mémoire, attention, conscience, représentation mentale...), et sont définies par Tiberghein (2002) comme « l'ensemble des disciplines qui ont pour objet d'établir la nature des relations entre la cognition et le cerveau » (Frayssinhes & Pasquier, 2018, https://journals.openedition.org/edso/3920?lang=fr).

Les neurosciences cognitives liées à l'éducation visent à l'acquisition de nos savoirs et de nos réflexes. Sous cet aspect, elles permettent de comprendre le mécanisme de la pensée humaine, mais encore les réactions comportementales lors du processus de l'apprentissage allant de l'étape initiale de l'acquisition jusqu'à celle de mémorisation. D'après Dehaene (2012), professeur au Collège de France, les neurosciences cognitives ont identifié au moins quatre facteurs qui déterminent la vitesse et la facilité d'apprentissage : a. l'attention, b. l'engagement actif, c. le retour d'information (feed-back), d. la consolidation.

En premier lieu, l'attention se définit selon Akoun & Pailleau (2013), comme le mouvement cérébral qui va nous permettre d'orienter notre action en fonction d'un objectif, d'un centre d'intérêt. Grâce à elle, nous captons, par nos cinq sens, les différentes informations en provenance soit de notre environnement, soit de notre

ressenti émotionnel ou psychologique. Pour Dehaene, l'attention sert à sélectionner les informations, et agit directement dans le processus de mémorisation de l'information. Pour cette raison, il est nécessaire de capter l'attention des participants en focalisant sur l'essentiel tout en fixant les objectifs pédagogiques à l'avance dans le but d'obtenir une meilleure attention de l'audience.

En deuxième lieu, l'engagement actif permet de passer en action en œuvrant avec efficacité. Dehaene souligne qu'un organisme passif n'apprend pas. L'apprentissage est optimal lorsque l'enfant alterne apprentissage et test répété de ses connaissances. En ce sens, l'action permet d'augmenter la quantité des informations retenues, mais nécessite l'implication active des apprenants en vue d'augmenter la mémorisation. Ainsi, il est question d'engagement actif des participants dans des situations en contexte réel ou même fictif.

En troisième lieu, le retour d'information (feed-back) en arrière devient optimal pour l'apprentissage, car il permet de recevoir un retour d'information immédiat sur l'action en cours. De cette manière, en cas d'erreur, l'action corrective sera efficace par le recours à un jugement complémentaire, afin de porter un éclaircissement sur les acquisitions antérieures.

En quatrième lieu, la consolidation est une étape ultime pour passer à la pratique et la répétition d'une tâche dans le but de libérer une partie de notre cerveau pour accumuler de nouvelles informations. Cette automatisation passe par la répétition et l'entraînement. Le point culminant d'un apprentissage est le "transfert de l'explicite vers l'implicite" : c'est l'automatisation des connaissances et procédures. Ainsi, la récupération des informations dans sa mémoire se réalise par automatisation, vu que l'automatisation permet de passer d'un traitement conscient, à un traitement automatisé inconsciemment.

Selon Dehaene (2012), il est essentiel de répéter une connaissance nouvellement acquise, car pour mémoriser une information, notre cerveau a besoin de trois passages au minimum, tandis que pour intégrer une nouvelle habitude, il a besoin de vingt et un (21) jours. C'est pourquoi il s'avère essentiel de donner aux enseignants un bagage de principes fondamentaux sur la plasticité cérébrale et les apprentissages. (Dehaene, 2012, https://www.college-de-france.fr/media/stanislas-dehaene/UPL4296315902912348282_Dehaene_GrandsPrincipesDeLApprentissage_CollegeDeFrance2012.pdf).

3.2. Fonctionnement et réactions du cerveau : Mieux comprendre le mécanisme d'apprentissage

« Les neurosciences et la neuropsychologie cognitives se concentrent sur de possibles liens causaux entre les structures et les fonctions cérébrales. Perception, langage, motivation, raisonnement, émotions, créativité, mémoire, attention, conscience sont à l'origine des comportements de humains. » (https://institutduce-rveau-icm.org/fr/neurosciences/). Du fait que les neurosciences cognitives étudient le fonctionnement et les réactions du cerveau dans l'exécution de différentes activités comme la réflexion, l'attention, et surtout la mémorisation, il s'avère de prime intérêt de focaliser sur les mécanismes d'apprentissage.

Pourtant, lors d'un processus d'apprentissage, qui vise à la réussite, il est nécessaire de se concentrer sur la participation active des actants tout en impliquant l'engagement de l'activité cérébrale. Dans ce cas, il faudrait tenir compte de facteurs additionnels comme : a. la récompense : lorsqu' on obtient un jugement positif ou si l'on fait preuve de réussite, le cerveau envoie un message positif, b. la motivation : c'est un élément clé de la réussite si l'on crée un univers agréable et décontracté, on arrive à transformer les temps d'apprentissage en des moments ludiques, c. attention: Être attentif lors de l'apprentissage permet au cerveau d'enregistrer de manière optimale une nouvelle information lors de sa phase d'encodage (première étape de la mémorisation).

D'après Stanislas Dehaene, neuroscientifique, l'attention permettrait au-delà de bien mémoriser, d'apprendre plus vite, d. l'exercice physique : Selon les neurosciences cognitives, pratiquer une activité physique pourrait rendre plus efficace notre apprentissage et notre mémorisation, e. le besoin de sommeil : Les neurosciences ont démontré que durant la nuit, notre cerveau reprenait nos entraînements de la journée, autant sportifs qu'intellectuels.

Ce processus lui permet de créer ainsi de nouveaux réseaux de connexions entre les neurones. Dans la communauté des neurosciences, beaucoup d'experts soutiennent l'idée que

> *Les processus d'apprentissage s'opèrent selon le principe connexionniste : pour que l'information (sous forme de stimulus) soit retenue, les réseaux synaptiques se modifient en créant de nouvelles connexions entre les neurones. C'est la plasticité synaptique. Cette modification des connexions est exécutée selon deux processus principaux : la potentialisation à long terme (LTP) et la dépression à long terme* (Gaussel & Reverdy, 2013, pp. 4-5).

À coup sûr, les neurosciences éducatives demeurent un outil pertinent pour apporter une validation scientifique dans les pratiques pédagogiques. Il demeure important de faire participer les élèves pour stimuler leur attention, mais encore de remobiliser les connaissances à plusieurs reprises, afin de faire preuve de récupération des données transmises tout en accordant une place majeure à l'aspect ludique et à la plasticité cérébrale durant toutes les phases de l'apprentissage.

4. Les neurosciences émotionnelles : La place prépondérante des émotions dans les tâches à entreprendre

Dans une dimension émotionnelle, les neurosciences s'appuient sur la place prépondérante des émotions dans les tâches à entreprendre. Selon Damasio, le cerveau seul ne fait pas l'esprit humain. Les nombreuses interactions entre le cœur et la raison, réfutent le dualisme cartésien, empruntant à Spinoza ses concepts, pour définir une nouvelle neurobiologie du sentiment et du comportement social.

4.1. Étudier les interactions entre le cœur et la raison

Depuis une vingtaine d'années, Damasio l'auteur des ouvrages : "L'Erreur de Descartes : la raison des émotions" (1995) et "Spinoza avait raison: joie et tristesse,

le cerveau des émotions" (2003) met en valeur la place des émotions dans le processus décisionnel. Tout en réfutant le dualisme cartésien, il met en avant les concepts de Spinoza pour souligner le rôle important des interactions, qui ont lieu entre le cœur et la raison.

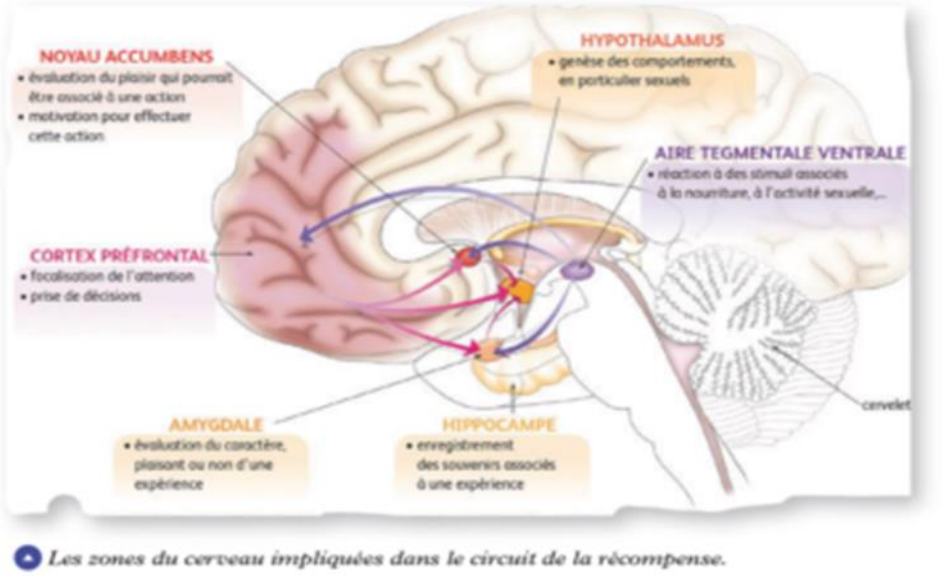
> Damasio reprend l'idée essentielle selon laquelle la vie représente un acte complexe où les sentiments sont l'expression de la lutte pour atteindre l'équilibre. L'esprit existe pour le corps : ils composent ensemble un organisme qui tend à se préserver et à atteindre le bien-être via les émotions et les sentiments (« the brain's body-furnished, body-minded mind is a servant of the whole body »). Le sentiment même de soi oriente le processus de planification mentale vers la satisfaction de ce besoin essentiel, qui s'apparente au fameux « conatus » spinoziste (Grandguillaume, Piroux, 2004, p. 479).

Plus tard, Damasio (2017) souligne que l'intelligence artificielle peut simuler les sentiments : elle ne peut pas les dupliquer, car les organismes artificiels sont sans vie tout en mettent en évidence que les arts, les sciences et les technologies viennent d'une nécessité de réponse qui dérive des émotions.

En éducation, il serait essentiel d'étudier le rôle des neurosciences pour valoriser la participation active des apprenants et leur implication dans des tâches collaboratives lors du processus pédagogique. En effet, il faudrait accorder une place importante à la dimension émotive et faire susciter la motivation des participants durant toutes les phases de l'apprentissage pour remobiliser les acquis tout en focalisant sur l'aspect ludique car les neurosciences *« Elles pointent aussi le rôle de l'émotion et du plaisir dans l'apprentissage, et remettent ainsi en cause l'utilité des punitions ou de la notation, souvent stigmatisante et peu efficace. »* (https://courier.unesco.org/fr/articles/les-neurosciences-lecole-entre-mirage-et-miracle).

4.2. S'orienter vers une nouvelle neurobiologie du sentiment et du comportement social

Damasio focalise sur la place prépondérante des émotions dans nos prises de décision et s'intéresse à définir une nouvelle neurobiologie du sentiment et du comportement social. En effet, les dernières études du cerveau mettent en avant le rôle fondamental de l'aire tegmentale ventrale, une toute petite zone du cerveau qui attribue à une expérience une valence émotionnelle, positive ou négative, comme le note Carry (2021).



Les zones du cerveau impliquées dans le circuit de la récompense.

Figure 1. Les zones du cerveau impliquées dans le circuit de la récompense
Source : Les neurosciences : les émotions au service des apprentissages - NRP Lycée (nathan.fr), https://nrp-lycee.nathan.fr/actualites/les-neurosciences-les-emotions-au-service-des-apprentissages/

Lors de la confrontation avec un événement semblable, l'aire tegmentale ventrale, activée par l'empreinte de l'événement antérieur, va – ou non ! – décharger de la dopamine dans le cortex préfrontal, centre de la prise de décision, qui permettra à l'individu de s'impliquer dans la tâche. À défaut, ce dernier éprouvera de la réticence, voire de la répulsion, et dans tous les cas tendra à fuir ce genre de situations. Notons que ce phénomène agit bien souvent à notre insu… et explique aussi en grande partie le phénomène de « l'intuition » (et surtout de la « bonne » intuition), qui est en fait une compilation inconsciente de l'expérience croisée avec la valence émotionnelle de chacune d'entre elles (Carry, 14/09/2021, https://nrp-lycee.nathan.fr/actualites/les-neurosciences-les-emotions-au-service-des-apprentissages/).

D'après ses recherches, Damasio postule que le souvenir de la teinte émotionnelle d'un événement permet de prendre des décisions plus pertinentes quand on se retrouve confronté à des situations similaires. En clair, les émotions aident à raisonner, même si on n'en a pas conscience. *« Si on en croit Deci et Ryan, repris par Lieury et Fenouillet, la motivation intrinsèque pour les apprentissages (donc pour les apprentissages eux-mêmes, et non une récompense) serait dépendante du niveau d'autonomie, c'est-à-dire de liberté laissée dans ces apprentissages, et du niveau de compétence perçue, que Bandura, un autre chercheur dans le domaine, appelle « sentiment d'efficacité personnelle (SEP »* (Carry, idem).

5. Numérisation progressive du contexte éducatif à l'époque post-pandémique

Avec l'intégration des médias numériques dans toutes les circonstances de la vie humaine, et surtout avec la tendance à numériser progressivement le contexte éducatif à l'époque post-pandémique, l'échange des données numériques se propage incessamment de sorte que les nouveaux outils de communication et de collaboration réussissent à conditionner nos sensations, mais aussi notre comportement. Car la numérisation dans l'éducation exerce une influence non seulement sur nos perceptions et pensées, mais encore sur notre équilibre mental en engendrant des conséquences sur le rythme biologique, neurologique et la vie psychologique des usagers.

5.1. Neuro-imagerie et neuro-informatique : de recherches innovantes pour conditionner notre perception et stimuler la mémorisation

De renommée mondiale, le Centre d'imagerie cérébrale McConnell (CIC) au Canada se voue à la recherche en neuro-imagerie pour comprendre les mécanismes qui sous-tendent la cognition et faire progresser notre compréhension des troubles du cerveau. Le Centre des neurosciences intégrées McGill (CNIM) mène des recherches à base computationnelle sur le cerveau en utilisant des approches mathématiques et statistiques innovantes. Le groupe de neuro-imagerie et neuro-informatique offre un environnement de recherche multidisciplinaire dynamique ouvert, collaboratif, interdisciplinaire et catalytique pour la recherche fondamentale et clinique en neurosciences (Https://www.mcgill.ca/neuro/fr/recherche/groupes-de-recherche/neuro-imagerie-et-neuro-informatique).

5.1.1. Décrypter le fonctionnement du cerveau à l'aide de techniques sophistiquées : l'EEG & l'IRM

L'étude du fonctionnement du cerveau se réalise par le recours à de techniques de plus en plus sophistiquées allant de l'électro-encéphalographie (EEG) et de la magnéto-encéphalographie, à l'imagerie par résonance magnétique fonctionnelle (IRMf) et la spectroscopie. Ainsi, le traitement des signaux et leur interprétation permettent d'évaluer les processus cognitifs. De recherches innovantes mettent en application ces nouvelles techniques pour décrypter le fonctionnement du cerveau. Plus précisément, Nesma Houmani, spécialisée dans l'analyse et le traitement des signaux électro-encéphalographiques (EEG), à Télécom SudParis et s'aide d'algorithmes de machine learning et d'intelligence artificielle pour extraire des marqueurs EEG. *« Dans le cadre de ses recherches sur l'attention visuelle, Nesma Houmani se sert notamment de l'EEG couplé à un dispositif d'eye-tracking pour déterminer comment un sujet s'engage et se désengage d'une tâche. D'autres équipes utilisent l'EEG pour la reconnaissance des émotions, ou encore pour la compréhension des mécanismes décisionnels »* (https://imtech.imt.fr/2019/02/04/t-echnologies-decrypter-cerveau/).

5.1.2. EEG VS IRM fonctionnelle pour décrypter le mécanisme du cerveau humain

Si l'EEG s'avère limité au niveau de la résolution spatiale, à l'inverse, l'IRM fonctionnelle (IRMf) possède une très bonne résolution spatiale, mais une mauvaise résolution temporelle. *« Nicolas Farrugia travaille actuellement à IMT Atlantique*

sur les applications du machine learning et de l'intelligence artificielle aux neurosciences. Deux paradigmes sont principalement étudiés en neurosciences : l'encodage et le décodage. Le premier cherche à prédire l'activité cérébrale générée par un stimulus, le second à décrypter le stimulus à partir de cette activité. » (https://imtech.imt.fr/2019/02/04/technologies-decrypter-cerveau/). Ainsi, on vise à étudier le rôle de l'intelligence artificielle dans le domaine du décodage et à traiter les mécanismes cognitifs, afin de mieux comprendre le comportement humain.

5.2. L'impact de la cognition sociale dans les interactions en ligne : exercer une influence forte sur notre mentalité et sur notre équilibre mental

Le rapport étroit entre la cognition chaude et froide met en exergue le rôle primordial de la cognition sociale, qui s'autorégule par la réaction comportementale des individus dans le milieu qui les entoure, car ces derniers demeurent influencés par leurs croyances, mais aussi par leur vie psychique, incluant émotions, état affectif, fonctions psychomotrices. La cognition chaude et froide s'associent et demeurent complémentaires dans les interrelations entre les personnes en formation et leur environnement virtuel, mais encore physique.

Avec le recours à des tâches collaboratives en ligne, les participants deviennent acteurs et co-acteurs en cultivant en même temps leurs compétences cognitives, socioaffectives, mais encore transversales. C'est pourquoi il est nécessaire de prendre conscience des états mentaux des participants, afin de les engager et de les réadapter dans le contexte d'apprentissage hybride (Efthimiadou, 2021).

5.3. L'avenir des neurosciences computationnelles et de l'Intelligence Artificielle

La progression de la recherche et la compréhension du mécanisme du cerveau sont axées sur l'Intelligence Artificielle comme le Chatbot Generative Pre-trained Transformer (ChatGPT) et l'avenir des neurosciences computationnelles ou même le projet Cerebro, une méthode innovante pour l'imagerie de l'activité cérébrale.

5.3.1. Le Chatbot Generative Pre-trained Transformer (ChatGPT)

Les neurosciences computationnelles se concentrent sur le développement de modèles mathématiques et informatiques pour étudier le système nerveux. Avec l'avènement de Chatbot Generative Pre-trained Transformer (ChatGPT), se forment de données textuelles par la génération des réponses de type humain dans un cadre conversationnel. De plus, la capacité de ChatGPT à apprendre à partir de grandes quantités de données peut être appliquée à l'analyse d'ensembles de données neuronales à grande échelle. Les chercheurs génèrent des cartes de plus en plus détaillées de l'activité neuronale pour mieux détecter la communication neuronale par l'étude des relations entre les différentes régions du cerveau (Frąckiewicz,12/07/2023,https://ts2.space/fr/chatgpt-et-lavenir-des-neurosciences-computationnelles-faire-progresser-la-recherche-et-la-decouverte-du-cerveau-axees-sur-lia/).

D'autre part, ChatGPT ce modèle d'Intelligence Artificielle de pointe développé par OpenAI, peut être utilisé comme un outil pédagogique puissant dans le domaine des neurosciences computationnelles par sa capacité à s'engager dans des conversations en langage en donnant accès à des expériences d'apprentissage interactives.

5.3.2. Le projet Cerebro : une méthode innovante pour l'imagerie de l'activité cérébrale

Le projet de recherche Cerebro s'intéresse à collecter des images très fines et complètes de l'activité électrique du cerveau, grâce à un procédé non invasif reposant sur l'injection d'un nouveau produit de contraste. De cette manière, Cerebro réussit à augmenter la résolution de l'imagerie non-invasive en injectant dans le sang du patient un « produit de contraste », de nature électronique, qui permette d'obtenir une lecture précise du signal. *« Pour l'heure, nous en sommes encore en phase très amont, indique Adrien Merlini enseignant-chercheur au département Micro-ondes (MO) d'IMT Atlantique »* (https://www.imt-atlantique.fr/fr/actualites/cerebro-recherche-innovante). À terme, l'équipe envisage de concevoir un appareil de mesure pour une application clinique.

5.3.3. Les neurosciences computationnelles : Faire le lien entre les neurosciences (qui permettent de comprendre le cerveau) et des stratégies concrètes (qui permettent d'aider à apprendre)

L'activation des neurones passe par l'utilisation d'approches actives ainsi que par la limitation des sources de distraction. La pédagogie active suscite l'intérêt et l'attention des élèves, les met en action et facilite ainsi la compréhension.

Les sept (7) principes neuro éducatifs de Steve Masson (2020) permettent de faire le lien entre les neurosciences (qui permettent de comprendre le cerveau) et des stratégies concrètes (qui permettent d'aider à apprendre) visant à :

1. L'activation des neurones reliés à l'apprentissage : La pédagogie actionnelle, qui se centre sur l'apprenant fait susciter sa motivation et encourage la prise des initiatives ainsi que la collaboration mutuelle avec des tâches, 2. L'activation répétée des neurones : Les enseignants s'intéressent à planifier des phases d'activation qui permettent de répéter les concepts appris par des moyens variés ou même la rétroaction, 3. La récupération en mémoire : on accorde du temps au cerveau afin d' assimiler les acquis et le rendre actif par l'exploitation de différentes mémoires, 4. L'élaboration d'explications : Durant cette étape, il est question de créer des moments de réflexion pour que l'élève puisse recourir à des stratégies d'apprentissage pour apprendre de manière efficace, 5. L'espacement de l'activation des neurones : 6. La rétroaction : cette étape de retour en arrière (feed-back) invite l'enseignant à revenir périodiquement sur les apprentissages et permet à l'élève d'assimiler ses acquis, 7. L'esprit dynamique : dans cette étape ultime, il s'agit de développer chez les élèves un état d'esprit, qui les encourage à progresser dans le but de faire preuve de réussite (Brault Foisy, Masson, 2022, https://doi.org/10.26034/cortica.2022.1956).

6. Conclusion

En définitive, les performances technologiques mises au point dans le domaine des neurosciences peuvent susciter des espoirs pour leur intégration dans le domaine éducatif. Plus précisément, les neurosciences cognitives et émotionnelles s'associent et deviennent complémentaires, car les opérations de décodage et d'encodage d'un contexte se relient pour mettre en relief l'aspect cognitif, mais aussi

la dimension affective dans l'élaboration et la gestion des tâches à exécuter. C'est pourquoi il serait essentiel de tenir compte de la cognition sociale et du rôle de la mémoire dans les interactions en ligne et de prendre conscience des états mentaux des participants, afin de les engager et de les réadapter dans le contexte d'apprentissage numérique. D'autre part, l'avenir des neurosciences computationnelles et de l'Intelligence Artificielle par le recours à des méthodes innovantes sur l'imagerie de l'activité cérébrale envisagent de faire le lien entre les neurosciences (qui permettent de comprendre le cerveau) et des stratégies concrètes (qui permettent d'aider à apprendre). Étant donné le concept de plasticité cérébrale, qui permet de créer de nouveaux neurones par l'apprentissage et la formation tout au long de la vie, à l'avenir, les professionnels de l'éducation ne pourront plus se priver de la contribution des neurosciences en éducation par le recours à la remédiation ou même à des thérapies dans des publics spécifiques.

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L'ENSEIGNEMENT HYBRIDE DU FLE DANS LE CYCLE SECONDAIRE QUALIFIANT MAROCAIN A L'ERE DU CORONAVIRUS : CAS DE QUELQUES LYCEES A KENITRA*

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Résumé

Au Maroc comme pratiquement partout dans le monde, les mesures préventives induites par la crise sanitaire ont imposé d'une manière urgente et massive des changements radicaux et permanents dans les pratiques scolaires. Le décloisonnement de l'usage du numérique s'est présenté comme l'issue la plus adéquate susceptible d'assurer la continuité pédagogique. Les apprentissages, qui étaient jusque-là totalement dispensés en présence, se voient transformer subitement en un enseignement alternant le présentiel et l'auto-apprentissage à distance, d'où le concept d'enseignement "hybride". Compte tenu de son caractère brusque et hâtif, l'adoption de l'approche hybride fait couler beaucoup d'encre. Certains la voient comme une fantastique opportunité favorisant l'usage des TICEs, mais la plupart la considèrent comme aléatoire. Dans cet esprit, la présente contribution a pour objectif d'étudier les pratiques d'hybridation de l'enseignement/apprentissage du FLE mises en place par quelques lycées à Kenitra durant l'année scolaire exceptionnelle (2020/2021) afin d'analyser les principaux facteurs qui les conditionnent et de proposer des suggestions susceptibles d'en tirer pleinement profit.

Mots-clés : *Hybridation ; TICEs ; Covid 19 ; FLE ; Défi***.**

HYBRID TEACHING OF FLE IN THE MOROCCAN QUALIFYING SECONDARY CYCLE IN THE MIDST OF COVID-19 PANDEMIC: CASE OF SOME HIGH SCHOOLS IN KÉNITRA

Abstract

In Morocco, as almost everywhere in the world, the preventive measures induced by the health crisis have forced not only urgent and massive but also radical and permanent changes in school practices. Therefore, digital technology has been

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introduced as the most appropriate outcome to ensure pedagogical continuity. Apprenticeships and classes, which until then were entirely provided in person, were suddenly turned into an educational model that alternates face-to-face and virtual self-learning courses, at a distance, hence the concept of "hybrid" teaching. Given its abrupt and hasty nature, much has been said about this "hybrid approach". Some may see it as a fantastic opportunity to promote ICTs, but most consider it very random and even chaotic. With that being said, the following contribution aims to study the hybridization of FLE teaching/learning as it has been implemented by some high schools in Kenitra during the pandemic (school year 2020/2021) to analyze its effects and main factors, before giving suggestions to improve and take full advantage of this learning system.

***Key words*: *Hybridization; ICT; Covid-19; FLE; Challenge*.**

1. Introduction

Pratiquement partout dans le monde, la pandémie de la COVID-19 a fait subir aux systèmes éducatifs des secousses destructrices sans précédent. La désorganisation de l'enseignement a bouleversé « *la vie de près de 1,6 milliard d'élèves et d'étudiants dans plus de 190 pays sur tous les continents* ». (Nations Unies, 2020). Les mesures préventives induites par cette crise sanitaire ont imposé la fermeture des établissements scolaires afin de protéger la santé des élèves et des enseignants. Les acteurs de l'éducation se sont alors mobilisés en toute hâte pour garantir la continuité pédagogique. D'où le recours de beaucoup de pays au numérique. Les enseignants devaient subitement basculer tout leur enseignement du présentiel au distanciel, et gérer pendant la période du confinement ce nouveau dispositif, auquel ils n'étaient préparés. À la rentrée de septembre 2020, en fonction de la virulence de l'épidémie, et face aux contraintes imposées par les modalités de réouverture des écoles (distanciation physique, réduction de la taille des classes, port du masque, etc.), de nombreux pays ont accéléré les changements en cours en mettant en place des plans d'enseignement alternatif. Le modèle « hybride », associant diverses formes d'enseignement, s'est très vite imposé pour amortir le choc de la crise.

Au Maroc, l'hybridation brusque et hâtive de l'enseignement-apprentissage a rencontré beaucoup de résistance de la part des enseignants, des apprenants et des parents. Cette désaffection, incompatible avec l'orientation du ministère de l'éducation nationale, est tributaire de plusieurs facteurs motivationnels, matériels, etc.

Dans ce contexte pédagogique inédit, notre communication tentera de vérifier dans quelle mesure l'hybridation de l'enseignement-apprentissage du FLE au cycle secondaire qualifiant était pratiquée durant l'année scolaire (2020/2021). Pour répondre à cette question, une enquête a été initiée auprès de professeurs de français dans sept lycées d'enseignement général. Nous présenterons la méthodologie de recherche utilisée pour recueillir les données qui seront exploitées et analysées dans la deuxième partie de cette contribution afin de présenter un diagnostic des pratiques

de l'hybridation et surtout de tenter d'identifier les freins au déploiement de ce dispositif et d'en puiser des solutions.

2. Methdologie de recherche

Dans notre recherche, nous avons opté pour une démarche d'analyse quantitative moyennant une enquête par questionnaire des pratiques des acteurs clés (les professeurs) afin d'en déduire les difficultés relatives à l'adoption du dispositif hybride dans l'enseignement-apprentissage du français au cycle secondaire qualifiant marocain durant l'année scolaire (2020/21). L'étude est effectuée auprès de six lycées publics et privés qui se situent au centre de la ville de Kénitra : Abderrahman Ennacer, Ibn-Alhaytham, Taha Hussein, Driss Chraïbi, Alpha, et Abboud scientifique. Ce sont des établissements d'enseignement général qui comptent des classes scientifiques et littéraires. Le choix de ces lycées ne dépend d'aucun critère de sélection ; mais répond principalement à un besoin de proximité géographique. La population ciblée par cette enquête est constituée de professeurs de français du second cycle qualifiant ayant pour charge durant l'année scolaire (2020/21) des classes de première année du baccalauréat. Les questions de recherche auxquelles ce travail entend répondre sont les suivantes :

- **Quels sont les obstacles entravant l'adoption du dispositif hybride au lycée marocain et comment les surmonter ?**
- **Quels leviers pour améliorer l'efficience des cours hybrides ?**

Pour mener à bien notre étude, nous émettons les hypothèses de recherche suivantes que nous essayerons de vérifier au cours des analyses :

H1 : L'intégration limitée des TICEs dans les pratiques scolaires peut freiner l'adoption de l'approche mixte ;

H2 : L'absence de formation adéquate peut favoriser le désengagement des enseignants et entraver l'acceptation du dispositif hybride ;

Pour pouvoir nous prononcer sur ces hypothèses, l'analyse de l'engagement et des attitudes des professeurs face à l'approche hybride constitue une source pertinente d'informations. Certes, vouloir mesurer l'engagement d'un ensemble d'individus est relativement difficile étant donné sa complexité. Toutefois, nous tenons à préciser que dans notre recherche, il sera question de la dimension comportementale qui manifeste des indices observables susceptibles de témoigner de l'engagement de la personne. Kiesler explique à juste titre : « *L'engagement est le lien qui unit l'individu à ses actes comportementaux* » (Kiesler, 1971).

Pour orienter notre recherche, nous avons fait appel aux travaux portant sur l'apprentissage situé (Brown, 1989). Selon cette approche, l'apprentissage doit s'inscrire dans une situation pour avoir un sens. Il se construit et s'utilise dans un contexte social, productif et authentique. L'accent est donc mis sur le contexte où la perspective culturelle s'appuie sur l'authenticité des activités, le travail collaboratif et l'interaction sociale (Brown, Collins et Duguid, 1989). De ce fait, la construction du savoir découle de la participation aux pratiques sociales dans un domaine d'action

« *la communauté d'apprentissage* » et « *la communauté de pratique* » (Lave et Wenger, 1991). Dans ce cadre, les TICEs permettent comme l'a expliqué Tardif (1998) l'introduction des apprentissages situés en classes par le biais de la communauté d'apprentissage ou de la communauté de pratique. Dans ces domaines d'action, la construction des connaissances est collaborative et la compréhension est partagée sans que de la proximité géographique ne soit contraignante.

Le questionnaire de l'enseignant[3]

Il était prévu de réaliser des entretiens semi-dirigés auprès des professeurs pour recueillir des informations complètes et détaillées sur leurs comportements et leurs opinions par rapport à l'hybridation. Toutefois, l'enquête a coïncidé avec la période des contrôles continus et des cours de rattrapage et de soutien (moins de deux semaines avant l'examen régional unifié). C'était donc difficile de s'entretenir avec les enseignants, ce qui nous a amenée à opter pour le questionnaire en privilégiant tout de même les questions ouvertes afin de recueillir le plus de données possibles. Sur la période du 03 au 07 Mai 2021, 30 professeurs ont été contactés. Les questionnaires qui leur sont administrés s'articulent autour de trois axes principaux :

- **Le recours aux TICEs : Fréquence d'utilisation, et les formations suivies.**
- **L'hybridation des cours : Les outils et logiciels employés, et les activités hybridées.**
- **Le ressenti par rapport à l'hybridation de l'enseignement-apprentissage : Les avantages et les inconvénients, la facilité et l'utilité de l'utilisation de ce dispositif.**

Tous les professeurs contactés ont répondu à l'enquête. Ils ont entre 2 et 34 années d'expérience dans l'enseignement.

3. Résultats des analyses

3.1. Analyse des questionnaires

Notons que la variable de l'âge des enquêtés est prise en compte vu son impact indéniable sur le rapport de l'enseignant avec la nouvelle technologie. Comme nous l'avons déjà signalé, les professeurs interrogés ont entre 2 et 34 années d'expérience dans l'enseignement. Près de 67% d'entre eux ont entre 36 et 55 ans.

L'utilisation des TICEs

L'intégration des TICEs est un facteur déterminant qu'il faut prendre en considération.

[3] Cf. l'annexe.

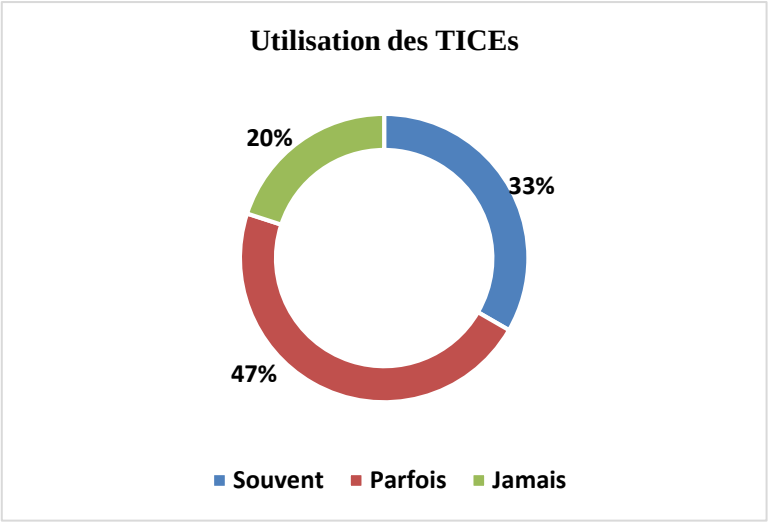

Figure 1. Représentation graphique de l'utilisation des TICEs

Ces résultats traduisent la problématique de l'intégration timide des TICEs dans les pratiques enseignantes. Uniquement 33 % des professeurs du FLE interrogés confirment leur recours régulier aux outils numériques, contre 20 % qui révèlent ne jamais les utiliser. Les 6 professeurs ayant déclaré n'avoir jamais inséré les TICEs dans leurs cours, ont entre 38 et 53 ans. Ils font partie des « *immigrants du numérique* »[4] qui doivent peiner pour maitriser cette nouvelle technologie, ce qui peut générer une certaine résistance voire même refus de l'objet TICEs.

En ce qui concerne la formation aux TICEs, les résultats recueillis attestent que :

- uniquement 12 professeurs sur 30 affirment avoir bénéficié d'une formation relative à l'utilisation des technologies en classe ;
- 7 enseignants sur les 12, ayant reçu des formations aux TICEs, attestent qu'elles ne sont pas suffisantes pour recourir adéquatement à ces outils ;
- 78% des professeurs enquêtés déclarent avoir besoin de formations, ou qu'il leur serait utile de se mettre à jour en en suivant d'autres.

Ces résultats confirment l'importance du « *guidage* » (Tardif, 1998). En effet, le rôle déterminant de la formation continue (adéquate) dans le bon accompagnement des enseignants, leur sensibilisation aux biens faits du numérique et le partage des bonnes pratiques est incontestable. Selon Lameul, « *ril n'existe pas de bonnes ou de mauvaises technologies mais de plus ou moins bonnes pédagogies utilisant les technologies* » (Lameul, 2006).

[4] « Les immigrants du numérique sont les personnes qui ont grandi avec les objets analogiques tels que le téléphone fixe ou la télévision. On les oppose aux enfants du numérique, qui ont été immergés dès leur naissance dans les technologies du numérique. Cette génération s'adapte aux innovations technologiques, avec toujours quelques réflexes analogiques » https://fr.wikipedia.org/iki/Immigrant_du_num%C3%A9rique.

L'âge et la formation sont des facteurs relatifs à l'humain. Ils s'entrecroisent et conditionnent le changement réussi. La lenteur de l'intégration des pratiques numériques dans la sphère scolaire marocaine pourrait résulter du manque et/ou de la qualité faible de la formation. L'ambiguïté chez les **professeurs surtout chez les «** *immigrants du numérique* » conduit à la méconnaissance de l'intérêt de ce changement digital. Dans ce cadre, Nimier (2016) relie la réussite du changement à la clarté de la vision globale en insistant sur la nécessité de l'explication du changement afin d'instaurer un cadre rassurant et d'éviter de créer « *une polémique où chacun se bat contre des moulins à vent* ». De ce fait, ne pas tenir compte de la primauté de la formation continue peut altérer les rapports de l'enseignant à l'objet TICEs.

L'adoption de l'hybridation durant l'année scolaire 2020/21

En dépit de leur recours très limité aux TICEs, les professeurs enquêtés sont conscients de l'utilité de l'approche mixte.

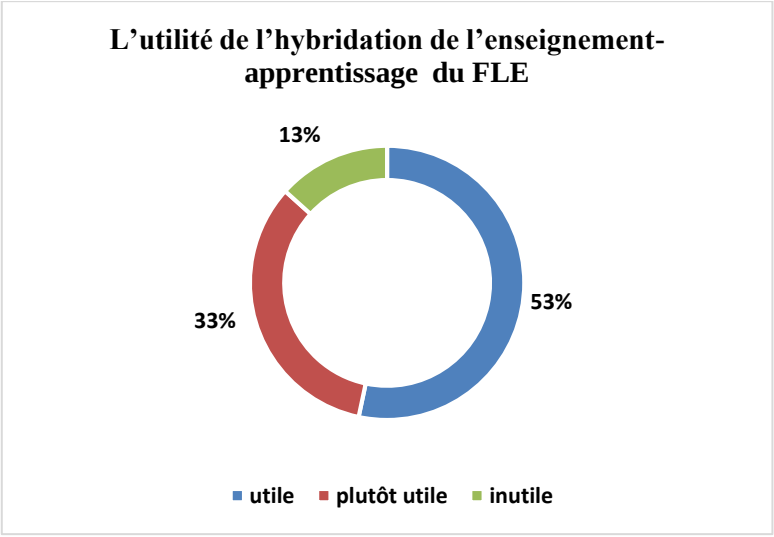

Figure 2. Représentation graphique du degré de l'utilité de l'approche hybride

La majorité des professeurs interrogés est consciente de l'importance du dispositif hybride. 86% des répondants confirment l'intérêt de ce processus éducatif, même si une grande partie d'entre eux estime que son utilité est restreinte.

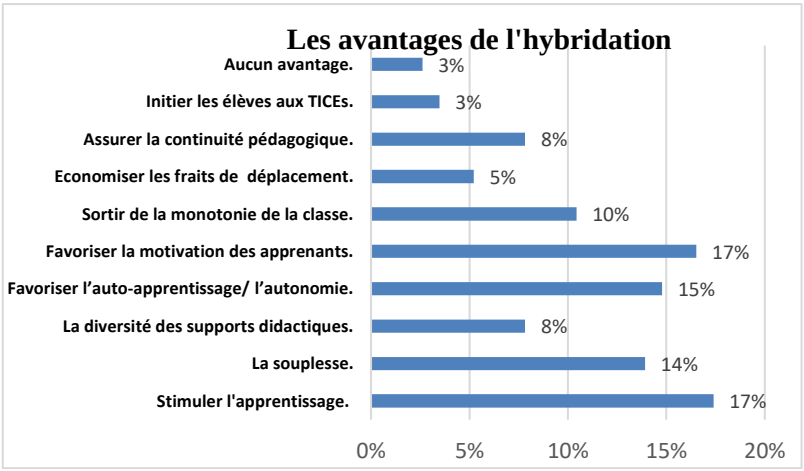

Figure 3. Représentation graphique des avantages de l'approche hybride

Au titre de la question portant sur les avantages de l'hybridation, le plus grand nombre des enseignants confirment l'importance que revêt ce concept pour la rénovation du système éducatif. 49% des réponses considèrent la motivation, l'autonomisation et la stimulation de l'apprentissage comme principaux apports de l'approche mixte.

Les professeurs enquêtés sont donc sensibles aux effets positifs du dispositif hybride. Quelles sont donc les incidences de cette prise de conscience sur leurs pratiques enseignantes ?

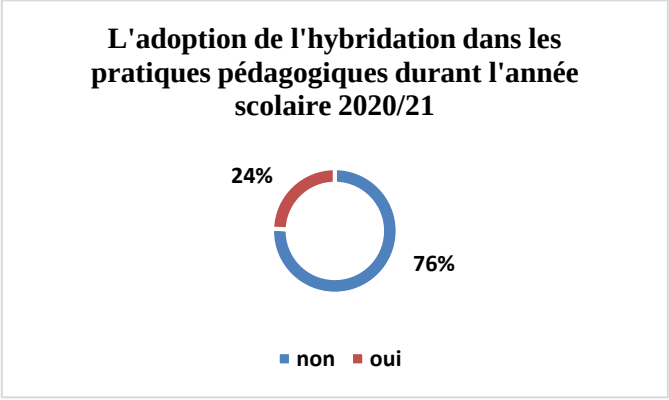

Figure 4. Représentation graphique de l'adoption de l'hybridation

En dépit de leur conscience de l'intérêt de l'approche mixte, 76% des répondants déclarent ne jamais adopter ce modèle dans leurs pratiques enseignantes durant l'année scolaire (2020/21.)

Rappelons que les contraintes de la crise sanitaire ont imposé *la mise en place de la rotation* des groupes d'élèves afin de réduire les effectifs *et les heures d'études*

en présentiel. Cette mesure préventive a toutefois ralenti l'avancement dans la réalisation du programme scolaire jugé inadapté à ces changements. Or, tous les professeurs enquêtés ont pour charge des groupes classes de la première année du baccalauréat qui sont contraints de passer un examen régional unifié. Donc, ils sont dans l'obligation d'achever leur programme scolaire, et l'unique issue pour pallier le retard est justement le recours à l'enseignement mixte. En dépit de toutes ces données, la majorité des enquêtés atteste ne pas utiliser le processus hybride jugé compliqué comme l'illustre le graphe ci-dessous :

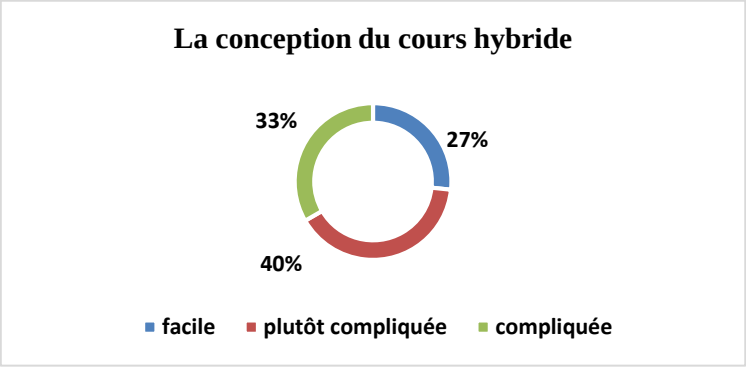

Figure 5. Représentation graphique du degré de complexité de l'hybridation d'un cours

77% des enseignants interrogés estiment que la conception d'un cours hybride est compliquée, ce qui ne peut qu'entraver l'adoption de ce dispositif. Plusieurs autres obstacles freinent la mise en place de l'approche mixte :

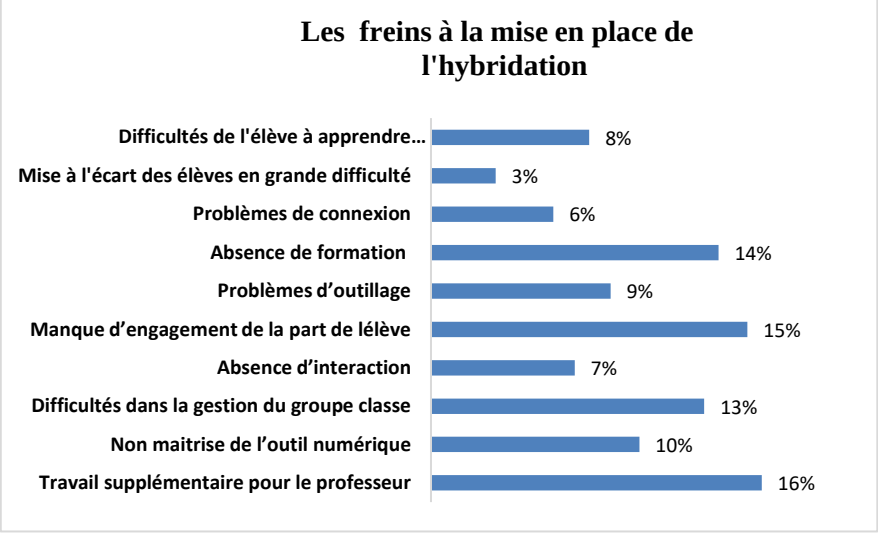

Figure 6. Représentation graphique des freins à la mise en place de l'hybridation évoqués par les professeurs

L'obstacle de taille qui semble freiner l'adoption de l'hybridation dans les pratiques enseignantes est le facteur humain. En effet, 16% des réponses portent sur l'investissement des professeurs qui semble ébranlé par l'augmentation de la charge de travail induite par le basculement vers l'approche hybride. Ce désengagement traduit le manque de sensibilisation et de soutien pédagogique indispensables dans toute dynamique de changement. 14% des réponses confirment ce constat puisqu'elles portent sur l'absence de formation en matière de scénarisation du cours hybride et 10% sur la non maîtrise de l'outil numérique, ce qui justifie la démotivation des enseignants. L'absence d'accompagnement pendant cette phase transitoire pousse même certains professeurs à contester l'intérêt de l'apprentissage mixte, puisque 28% des réponses attestent le manque d'engagement de l'apprenant, et les difficultés qui en découlent principalement au niveau de la gestion du groupe classe. De même, 12% des réponses portent sur la conviction que les élèves auront du mal à assimiler leurs cours et que les apprenants en difficulté se trouveront marginalisés. Cette méfiance est tout à fait légitime face à la prise de risque que le dispositif hybride représente par rapport à l'enseignement traditionnel.

Le facteur matériel est également mis en exergue dans ce graphe dans la mesure où 15% des réponses confirment les contraintes liées à l'outillage et la connectivité. De ce fait, l'intégration limitée des TICEs, comme nous l'avons signalée, impacte avec force la dynamique du changement.

En dépit de cette résistance générale, 24% des professeurs interrogés ont tout de même eu recours à l'hybridation durant cette année scolaire. Sans formation adéquate, ils se sont démenés avec les moyens du bord, ce qui pourrait expliquer les chiffres ci-dessous :

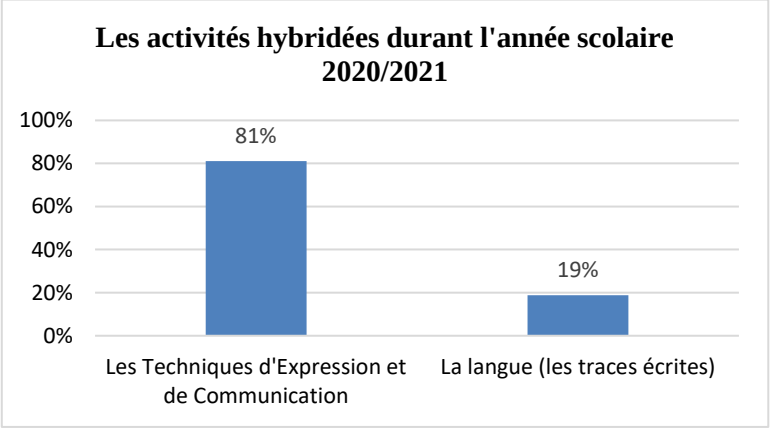

Figure 7. Représentation graphique des activités scolaires hybridées durant l'année en cours

Uniquement 2 activités sur 4 étaient concernées par le dispositif mixte, ce qui pourrait refléter les difficultés rencontrées lors de l'adoption de cette approche. Ainsi, faute de formation adéquate et d'accompagnement techno-pédagogique,

l'hybridation des leçons s'est réduite à un processus économiseur de temps, dont le rôle se limite au simple partage des traces écrites en ligne pour ne pas les copier en présentiel. Néanmoins, ces pratiques simplistes ne relèvent certainement pas de l'approche mixte qui s'inscrit dans le cadre de l'ingénierie pédagogique et qui requiert une planification rigoureuse. Les parties du cours hybride doivent être perçues dans leur globalité en tant que projet. Cette tendance à amoindrir le rôle de l'hybridation se dévoile également à travers le graphe ci-après :

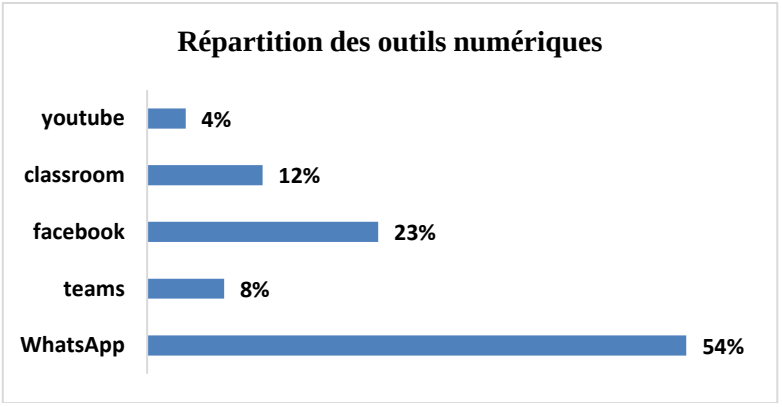

Figure 8. Représentation graphique de la répartition des outils numériques utilisés par les enseignants

Une simple lecture de la figure 8 reflète une grande méconnaissance en matière des plateformes et des outils pédagogiques en ligne compte tenu du nombre très réduit des outils numériques utilisés par les professeurs enquêtés. Nous constatons également une forte inclination pour le partage des contenus d'apprentissage. En effet, 81% des réponses portent sur les médias sociaux et principalement le *WhatsApp*. Ceci s'explique par l'absence de formation qui pousse les professeurs à improviser en se penchant sur les outils les plus répandus et les plus faciles à manier à savoir les espaces d'échanges sociaux. Offrant la possibilité de capter un maximum d'audience et de rester interconnecté, ces canaux de communication informels demeurent toutefois bancals au niveau des pratiques pédagogiques, car ils incitent à être de plus en plus multitâche ce qui constitue une source de distraction. En revanche, les plateformes pédagogiques en ligne (*Teams* et *Classroom*), qui permettent d'impulser l'apprentissage collaboratif et créer des environnements pédagogiques dynamiques, sont utilisées à hauteur de 20 % uniquement par rapport aux autres ressources.

A partir de cette analyse, on peut déduire que les pratiques pédagogiques des enseignants interrogés dévoilent des contraintes interdépendantes favorisant la résistance au changement du dispositif éducatif :

- Ces obstacles émanent principalement de l'absence de sensibilisation et de formation dont la motivation et l'engagement des professeurs dépendent étroitement. Dans ce sens, de nombreux travaux sur les attitudes des professeurs ont vu le jour :

(Danvoye, 2002 ; Garnier et Gauvin, 2000 ; Larose, de Grenon et Palm, 2004 ; Karsenti, 2004 ; Gervais, 2000). Nous en retiendrons dans ce cadre la citation de Lebrun : *« L'importance de l'information, du support technique et du soutien pédagogique aux enseignants est une priorité pour que les technologies catalysent réellement un renouveau pédagogique »* (Lebrun, 2014).

- Cette conduite de changement est également freinée par l'intégration limitée des TICEs dans la sphère scolaire et la non-maîtrise de l'usage pédagogique de l'outil numérique. En effet, « *si les enseignants ne sont pas formés à ces technologies, dans bien des cas, ils risquent tout simplement de perpétuer les méthodes traditionnelles d'enseignement en utilisant un nouveau médium »* (ibid).

3.2. Discussion à propos des résultats obtenus

La recherche a permis la validation des hypothèses selon lesquelles le recours à l'hybridation dans le lycée marocain serait entravé principalement par l'intégration limitée des TICEs dans les pratiques scolaires, et le désengagement des enseignants résultant de l'absence de sensibilisation et de formation adéquate.

Pour contrecarrer ces handicaps et utiliser efficacement l'approche hybride, il faut commencer par le pilier du changement à savoir l'enseignant. Si l'enseignant n'est pas convaincu de l'intérêt de l'adoption de l'hybridation, personne ne peut l'y contraindre, surtout que ce nouveau processus requiert de sa part un investissement non négligeable. B. Charlier (1998) souligne à juste titre que le changement peut concerner, les routines, les décisions de planification ou les connaissances du professeur. De ce fait, le changement peut conduire à « *une perte de compétence,* [...], *et une tension nerveuse étant donné que la part de l'incertain prend le pas sur celle de l'incontestable* » (Ducros, 1981, cité par Nimier, 2016).

Pour assurer une transition sereine et efficace au mode hybride, il faut à notre avis commencer par la création d'un climat propice au changement. En effet, une phase préparatoire assurant un bon dispositif de sensibilisation et de communication est grandement sollicitée. Nimier (2016) relie la réussite du changement à la clarté de la vision globale en insistant sur la nécessité de l'explication du changement afin d'instaurer un cadre rassurant et d'éviter de créer « *une polémique où chacun se bat contre des moulins à vent* ». Cette étape initiale vise le changement des mentalités dont la clé de voûte est bien sûr le professeur. Pour ce faire, l'organisation de « *communautés de pratique* » par le biais du coaching de groupe à titre d'exemple permettra aux acteurs de construire une vision collective de leurs solutions et d'améliorer leurs pratiques. Les membres de la communauté doivent partager leurs connaissances et les combiner à celles des autres membres pour favoriser l'entraide (Wenger, 1998). Par ailleurs, envisager l'intégration concrète des TICEs et la généralisation des équipements et des outils numériques dans la sphère scolaire fait partie intégrante de cette phase préparatoire, car l'infrastructure défaillante freine la conduite du changement. Changement qui peut également échouer facilement si on néglige le rôle crucial de la formation technique et pédagogique. Fullan (1998) recommande de s'assurer du soutien et/ou de la participation de l'institution ; de travailler en équipe ; d'accepter la diversité et de revoir régulièrement ses idées. Ainsi, l'implantation de la nouvelle approche réussira et sa consolidation se fera à

travers l'accompagnement technique et pédagogique qui offre les moyens nécessaires pour maintenir l'adhésion au changement. Notons enfin que l'institutionnalisation de l'approche hybride s'avère une mesure indispensable pour lui ôter ce caractère facultatif et volontariste susceptible d'affecter son adoption. Par ailleurs, assurer la connectivité haut débit, introduire des cours portant sur les méthodes d'utilisation des TICEs dans les programmes scolaires, réaménager le système éducatif pour tirer profit de l'apport didactique de l'approche hybride sont autant de mesures non moins importantes qui doivent être adoptées sur le terrain.

4. Conclusion

Au terme de cette contribution, nous rappelons l'intérêt de l'approche mixte qui crée, par le biais du numérique, des passerelles entre le présentiel et le distanciel, et se procure une grande flexibilité principalement sur le plan spatio-temporel, ce qui lui permet de s'adapter facilement aux situations contraignantes et de renforcer la résilience de l'écosystème éducatif. Pour assurer une transition sereine et efficace au mode hybride, la création d'un climat propice au changement s'avère primordiale. La mise à niveau de l'infrastructure à travers la diffusion des équipements et des ressources numériques est une phase préparatoire grandement importante. Faire souffler un vent nouveau au système éducatif impose également la sensibilisation qui à notre sens doit se faire en amont auprès des professeurs. La formation adéquate et l'accompagnement technique et pédagogique offrent aussi les moyens nécessaires pour maintenir l'adhésion au changement.

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Annexe

Questionnaire de l'enseignant

Dans le cadre d'une recherche de Master sur l'hybridation de l'enseignement-apprentissage du FLE durant l'année scolaire en cours (2020/21), nous vous saurions gré de bien vouloir répondre à ces questions. Nous signalons que les résultats recueillis seront traités et analysés de manière anonyme.
Nous vous remercions d'avance pour votre contribution.

Sexe:

☐ **Féminin** **Age: ……**

☐ **Masculin**

Années d'expérience professionnelle dans le domaine de l'enseignement: ……

- **Vous estimez que vous utilisez les TICEs dans vos cours:**

☐Très souvent ☐Pas souvent

☐Souvent ☐très peu

☐De temps en temps ☐Jamais

- **Avez-vous suivi une/des formation(s) spécifique(s) à l'utilisation des TICEs?**

☐Oui

☐Non

  - **Si oui, est-ce que cela vous a fourni suffisamment d'informations pour votre usage dans les cours?**

……
……
……

  - **Si non, pensez-vous qu'il vous serait utile d'en suivre?**

……

- **Vous trouvez l'hybridation de l'enseignement-apprentissage du FLE:**

☐Très utile ☐Plutôt inutile

☐Utile ☐ Inutile

☐Plutôt utile ☐ Totalement inutile

- **Quels en sont les avantages de l'hybridation de l'enseignement-apprentissage du FLE?**

  .....
  .....
  .....
  .....
  .....
  .....
  ..

- **Avez-vous adopté le dispositif hybride durant cette année scolaire?**

  ☐Oui

  ☐Non

- **Quelles activités avez-vous hybridées?**

.....
.....
.....

- **Quelles ressources numériques avez-vous utilisées?**

.....
.....
.....

- **La conception d'un cours hybride vous paraît:**

  ☐Très facile ☐Plutôt compliquée

  ☐Facile ☐Compliquée

  ☐Plutôt facile ☐ Totalement compliquée

- **Quelles difficultés avez-vous rencontrées pendant l'hybridation de vos cours?**

.....
.....
.....
.....

Merci de votre participation

THE EMOTIONAL WELL-BEING OF LEARNERS AS A DETERMINANT OF THE TRAINING ACTIVITY*

Ecaterina Sarah FRĂSINEANU[1], Vali ILIE[2]

10.52846/AUCPP.2023.2suppl.03

Abstract

Our article focuses on the complex issue of creating the emotional well-being needed by the students in academic learning. Especially after the COVID-19 pandemic, this challenge has become an aspect that is better acknowledged by both the trainers and the learners, and, following the applied empirical research, we managed to find out to what extent the well-being of our students conditions the activity of teaching-learning-assessment and, above all, how we can contribute to its establishment.

Social connection is a central factor, which has an impact on well-being, and the pandemic situation, evaluated through the eyes of the students included in the research sample, some time after it ended, confirmed that the most important factor for their well-being was the relationship with those close to them, with their colleagues and with the teachers they felt connected to. An essential role in this situation is attributed to affective regulation, possible to achieve through external facilitation, but, above all, through self-determination. However, whether they have a positive hedonic tone or are negatively felt, emotions, as reactions to change, have an adaptive role and are absolutely necessary for everyone.

Key words: *Training; Students; Well-being; Determinant; Emotional regulation.*

1. What does emotional well-being mean in the academic environment?

By training students, we understand the teaching, learning and assessment processes, with an emphasis on learning.

From a perspective that has the learner at its center, we appreciate that the complex activity of academic learning is influenced by a series of internal and external factors, among the internal ones being important: previous experiences;

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reporting to the results obtained; the desire for self-realization; the prestige gained through learning; intrinsic motivation; the educational ideal; the attitude towards oneself; the positive attitude towards learning; the attitude towards effort and professional training; moral-character traits; the will to learn; reporting to the social requirements and values of contemporary society.

At the level of each student, there intervene factors such as: maturity level, age, gender, social environment, self-image, temperament type, extroverted orientation of temperament, study skills, affective state that they induce themselves or which is created, in a multivariate and difficult to quantify context.

From an affective point of view, students experience different situations, closely related to their level of affectivity, which has a visible impact when they approach learning contents or when it is necessary to understand and update some experiences.

According to Diener, Lucas and Oishi (2002, p. 64), the definition of subjective well-being is an extensive one, because it involves experiencing pleasant emotions, the existence of low levels of unpleasant emotions, an increased life satisfaction, and its measurement is variable, that is, subjected to probability, especially over time, through the intervention of positive or negative memory filters that people apply.

Muntele-Hendreș (2021) explains, in an article focused on elucidating the predictive or the well-being creating aspect, that subjective well-being is synonymous, in common language, with happiness. In turn, the psychological meaning of happiness is from an affective point of view, that of joy, of positive emotion, and, from a cognitive point of view, that of satisfaction with one's life.

The emotional well-being, embodied in the case of training in the university environment, in students (aspect we stopped on), is a part of the general state of well-being, because a person can refer to many plans of his state of well-being: physical, financial, material, professional, marital, etc. and at several stages of his life.

For an effective academic learning, higher positive emotions are essential, those that are based on values, beliefs, personal interests, as a result of assigning value meanings to some events or activities. This is where joy, confidence, and anticipation come from. The regulation of emotions is useful to promote emotional and intellectual growth (Trofaila, Corotchih, 2019).

As we previously showed, there is no exhaustive quantification of these states, but they are related to feeling comfortable/safe, experiencing favorable/advantageous situations, feeling good, satisfied, having pleasure, being delighted, considering ourselves happy, being satisfied, feeling fulfilled.

In 2002, Diener, Lucas and Oishi listed among the pioneers of well-being/happiness theories Aristotle, then, much later, Freud and Maslow.

Currently, according to European Commission documents (2023), well-being at school means that pupils/students feel safe, valued and respected; being actively and meaningfully involved in academic and social activities; having positive self-esteem, self-efficacy and a sense of autonomy; maintaining positive and supportive

relationships with their teachers and peers; showing a sense of belonging to the class and the school; feeling happy and satisfied with their school life.

2. Aspects found in the field of literature. Well-being – determined or determinant?

Neacșu and Suditu (2020) emphasized the need for a balanced interaction between emotions, cognition and socio-moral values, which would contribute to the establishment of a healthy, stable, predictable and creative emotional climate, and also ensure the unity of mental, emotional, spiritual and physical life. Regarding the relationship between learning and emotionality, the mentioned authors argued that: "The objectives of human learning, especially today, emphasize the results of emotional-affective learning, which can suggest essential things regarding, in particular, the value of principles, legalities, working technologies, the necessary strategies and resources (...)." (p. 86).

The probable causes of well-being are multiple (Muntele-Hendreș, 2021) and they come from heredity, personality traits, as well as the environment. For example, there is clear research that correlates well-being with: extraversion; avoidance of neuroticism; self-esteem; place of internal control; optimism; formulation of clear goals in life.

Also, the existence of well-being is determined by: growing older (by resorting to self-regulation); the male gender (through the nonintervention of empathy, sadness); securing financial resources to help meet basic needs; access to a high social class or a quality lifestyle; a good level of education and culture (which ensures adaptation); social comparison applied moderately (Argyle, 2001, *apud* Muntele-Hendreș, 2021). It is a certainty that the positive emotional state influences, in turn, mental health, consisting of brain functioning and adaptive social manifestation.

Self-realization is a central element of emotional well-being, the latter meaning all the actions we take to bring about a positive change in our lives. The theory of self-determination (Ryan and Deci, 2000) postulated the connection between the subjective state of well-being and the manifestation of autonomy, competency and affiliation.

In fact, the subjective nature of well-being consists in the fact that, although they are short-lived and fluctuating, the assessments of the experienced emotional states can be considered representative of the nature of that person's everyday life, and the fact that the state of well-being can be approached generatively comes from the status that these perceptions and judgments obtain for the next stage of life, being bases for new experiences.

According to the research of Brown, Hoye and Nicholson (2012), self-esteem, self-efficacy, and social connectedness were all significant mediators of the volunteering-well-being relationship, and especially social connectedness remains subject to longitudinal analyzes to demonstrate its role as a causal factor for well-being.

In essence, positive affectivity refers to emotional states and traits that induce positive perceptions about oneself (self-esteem, self-efficacy), about the world we live in (feelings of coherence, controllability) and about the future (optimism). The subjective state of well-being is very close to happiness, and according to Seligman (2007, p. 77), a supporter of positive psychology, the formula for authentic, lasting happiness is a combination of genetic tendencies, with life circumstances and factors that are under our voluntary control by exercising positive character traits and by restructuring/ diminishing the negative ones. In other words, it is about the integration of the pleasant life with the good life and the meaningful life.

Considering the impact of the teachers' well-being on the quality of the educational process, a foray into the literature states that "Relevant and impactful research has associated well-being (or subjective happiness) with performance (Duckworth, Quinn, & Seligman, 2009), with resilience in the teaching activity (Klusmann, Kunter, Trautwein, Lüdtke, & Baumert, 2008), quality and performance in teaching (Retelsdorf, Butler, Streblow, & Schiefele, 2010), respectively the quality of learning outcomes (Caprara, Barbaranelli, Steca & Malone, 2006; Pakarinen *et al.*, 2010; Taylor & Ntoumanis, 2007)" (Tonciu, 2019, p. 16).

Returning to the person being trained, we can conclude, according to the opinion of Stein and Book (2007), that the general state of well-being of everyone depends on: a) Optimism, which is the ability to maintain a realistic and positive attitude, especially in difficult times; b) Happiness, which is the ability to be satisfied with life, to enjoy people, to be full of enthusiasm in a series of activities.

3. Solutions for achieving well-being

While emotional dysregulation consists in the "lack of control over the emotional process", emotional regulation resides in exercising influence over one's own emotions, "in particular, over the moment, manner, duration of their expression and manifestation" (Fernandez-Abascal, 2021, p. 125). An example given by the same author for emotional management, in facing difficult life situations, such as the one caused by COVID-19, is to get rid of "negative thoughts by remembering the happy moments in our lives, planning wonderful vacations or finding someone to share our problems with" (p. 129).

To achieve well-being, the solutions are diverse: experiencing emotions with a positive hedonic tone, because positive emotions open the way to engaging in life goals, which is closely related to the concern for personal development and maturation. Involvement produces well-being, creates positivity, protects health. Being at the origin of the psycho-emotional state, physical activity, balanced nutrition and quality sleep are also mechanisms that can be applied. Other techniques that can be applied, especially by educators, are avoiding criticism through an acceptance that facilitates change; proactive manifestation, decisiveness, empathy, tolerance, honesty and sincerity, treating with mutual care.

Managing emotions requires that a person who has an experience should also feel it, instead of repressing it, and then the experience is used to make a better decision. Reporting to affects is done in a thoughtful, logical manner, rather than

letting ourselves go and acting on them without anticipating the consequences. So, the ability to successfully manage emotions entails the awareness, acceptance and use of emotions in problem solving.

From the perspective of the ability to deal with aversions, conflicts, we appreciate as very useful and transferable to this aspect, of acquiring a positive emotional state, the "transformative approach", where "the main objective is exactly the "change for the better" of the parties" (Popescu, 2014, p. 191).

The reverse of the causes of unhappiness, identified by Seligman (2007), can become ways to contribute to one's own happiness. The PERMA model he proposed includes: Positive Emotion, Engagement, Relationships, Meaning and Accomplishments, and the temporal dimensions we must direct our attention to are both the present and the past or the future.

The role of external factors that influence the students' well-being is highlighted by concepts according to which "The university professor satisfied with life, who shares positive feelings in relation to their events, is a model for the students, contributing to the formation of specialists adapted to the contemporary professional and social rigors" (Batog, 2021, p. 191). Or, according to Martinez Martinez (2022, p. 23), from the perspective of psychological research, preventing certain situations and improving the lives of ordinary people are goals worthy of being taken into consideration because "(...) people's strengths act as shock absorbers or shields against mental disorders: courage, optimism, interpersonal skills, faith, hope, honesty, perseverance (...), to name a few".

Therefore, some techniques for cultivating well-being are: savoring the pleasure experienced through awareness and focused attention; combating deficient thinking styles (for example, pessimistic, of all-or-nothing kind) through cognitive therapies; practicing gratitude; indulgent restructuring/rewriting of personal history; favoring the emergence of positive emotions; strengthening social relationships.

4. The influence of online learning on the well-being of students

The opportunities that online technology brings derive from its main characteristics and advantages, which can offer situations similar to the real ones, generate the same types of responses from the learners, while also offering a high degree of control over the elements that make up the virtual environment.

The receptivity of ICT is obvious (New Technologies of Information and Communication) at the level of students, through accessibility, activism, interactivity, increasing the speed changes are produced and communicated with, recourse to critical thinking, which contributes to: obtaining a higher degree of autonomy in knowledge, increased accessibility, relatively low costs.

However, there are also many disadvantages of online education, including: the increase in the workload for teachers and students, the psychological discomfort involved in the uncertainty of searching for learning materials in the accessed sources, the increase in time allocated for information activity, demotivation in learning, the tendency to plagiarize/copy, poor social relations, loneliness,

sometimes cyberbullying, fatigue, damage to health, loss of self-confidence, sedentarism, etc.

Seligman (2007, p. 174) indicates among the causes of unhappiness: exaggerated individualism, exaggerated use of artificial ways to reach happiness (TV, drugs, shopping, games, etc.) and, last but not least, the lack of challenges brought by developed technology, which replaces efforts and makes young people believe that everything should and can be taken for granted.

Both in traditional, face-to-face training, and especially for the modern academic environment, influenced by modern, online training, can be applied what Goleman (2005) identifies as emotional activism: self-control and the ability to overcome anxiety and stress.

We fully agree with Goleman's (2005) proposal that directing one's own emotions and empathy should contribute to the development of social competency, through which the person manages to easily get along with people and correct "mismatches" in the social environment, because such a strategy is very useful in the context of student training.

Because more and more students are engaged in professional activities, a balance between work and personal life leads to better morale, as advocated by Leovaridis and Cârcu (2018). Furthermore, the learning ability of postsecondary students is affected by their mental health and well-being (Lindsay *et al*., 2023).

From a perspective that seeks to manage toxic situations and relate effectively to the people around us, Cantopher (2019, pp. 185-228) recommends staying calm and present, not getting involved in unnecessary conflicts, and de-escalating/fighting external discomforts of profiteers, abusers, slackers, energy vampires, manipulators, braggarts, narcissists, psychopaths, addicts and others, who endanger our well-being. It is interesting that even that particular person can find that he has a toxic behavior, in the sense that he harms those around him, and, then, progressive changes are needed.

As shown by Dumitrescu and Dumitrescu (2014, p. 261), "The fundamental parts of emotional intelligence, as well as its global structure, can be improved through training, guidance and experience".

5. Results obtained in the empirical research carried out

For the students who are trained in the certification program for the teaching profession, acquiring an initial training to be, in turn, trainers, the empirical methods of investigation such as the focus group and the pedagogical natural micro-experiment, applied in the framework of the action-research, represented, from our point of view, non-invasive methods through which we could find out their perceptions and check the progress of their training.

For the content sample, we focused on the training within the Fundamentals of Pedagogy subjects. Curriculum theory and methodology (first year of study); Theory and methodology of training. Theory and methodology of evaluation (second year of study).

The first discipline was covered in the academic year 2021-2022, for the most part, online, and the second, in the academic year 2022-2023, through face-to-face activities.

The sample of subjects consisted of 96 undergraduate students at a university in the south-west of Romania.

The purpose of the research was to establish whether in academic training the students perceive that they live an emotional state of well-being or not, and, based on this diagnosis, we aimed to identify and apply, together with the students, ways to reach it.

The main hypothesis we had in mind was that the well-being of our students conditions the effectiveness of their learning.

Because the subjects were involved in both experiences and effects of online and face-to-face training, we also hypothesized that there are differences in the level of self-perception of emotional well-being, depending on each context.

5.1. Results of the focus group

The purpose of the initiated discussions was to capitalize on the fundamental elements of emotional intelligence in achieving well-being in training.

Six focus groups were organized, with 16 students each, each debriefing session lasting approximately one hour, based on 5 key questions/items.

What do you understand by the subjective emotional state of well-being in training? was the opening question of the focus group. Many of the participants explained the difficulty of giving a precise answer, most synonyms being related to the pleasure of participating in activities, the existence of positive experiences, of being good with oneself, being balanced and reconciled from a psychological point of view. Students did not perceive academic emotional well-being as happiness, showing that it is more achievable in an informal context.

An item about the importance of others in creating and maintaining well-being was transposed by asking how important is the social environment for one's well-being? The social environment is made up of the people close to the student who studies at home (parents, siblings), in the university (teachers, colleagues), but also in other situations (for example, other people present in a library).

For most of the students, the answer communicated was to the extent of Much, because they realize the great importance that the internal factor has.

What are the qualities for capitalizing on the external factor? was another question. The recorded answers showed us that, for an optimal relationship, interpersonal communication skills are necessary, also highlighted by the students' preferences for direct, oral communication or indirect, written communication, during examinations, exams.

These answers were complemented by the perspective of accepting negotiation/transactions in interpersonal relationships, as mutually beneficial adaptations in supporting the learning process. In this case, interpersonal intelligence is manifested in I-Other relations, by "giving" or "rejecting", and Other-I, by "asking" or "receiving". Especially in the first year, students stated that they are worse at refusing or asking, but later on they develop those skills.

We mention that, from the perspective of the socialization process or adaptation to the specifics of the new group in the university environment, first-time students go through a phase of exploring relationships with their teachers and colleagues, then of actual compliance and integration from a socio-relational point of view. From a psycho-pedagogical perspective, "In the case of the environment, not only the spatial or temporal aspect must be taken into account, but also the subjective resonance, the attitudinal aspect; everyone selectively establishes the connection with the environment (the personal filter, the reading grid of reality, the structures to meet it)" (Maciuc, 2000, p. 12).

Correlatively, the importance of the Self in creating and maintaining well-being was rated at Very Much. In this case, the students detailed their situations by referring to the existing ability to learn how to obtain satisfactions and to love the learning activity, as part of their personal achievement and self-understanding. There are still many students who considered that self-confidence/esteem did not manifest itself at the level that would have been necessary, but that the state of well-being settles more and more during the academic studies.

Certainly, obtaining good results in evaluations or positive assessments from the teachers gives them confidence and well-being. For example, in the case of four of the respondents, they declared that the lack of self-confidence favors a strongly emotional, disorganizing manifestation before and during the examinations, even if in the usual training activities they are "balanced" participants, well valued by the teaching staff.

A last item of the focus group was about the emotional adjustment solutions applied by the students. The proposed solutions come from self-knowledge and self-acceptance, the correct perception of reality and others, the specification and definition of essential values, the clarification of future projects, the organization and monitoring of one's own activity, the expression of assertive attitudes, the use of physical relaxation techniques, mental control, physical exercises. Control over one's own emotional state of well-being must, in fact, be preceded by the prevention of negative states, by a balanced approach to the problem of the learning tasks, by action on optimizing the use of learning capacities, by motivation, training, as well as by improving typical responses, by self-reward, relaxation, autosuggestion.

5.2. Results of the comparison of grades in evaluations

The main measures used in the formative micro-experiment were to discuss the emotional state of the students − before, during and after the training activity, during the direct activities; to submit to their choices different means/solutions for acquiring well-being; to deepen topics specific to the subjects taught. Such themes, proposed by us, as trainers, were: Education and self-education; Principles, values, educational methods; Effective learning; Self-management of learning; Teaching styles and ways to facilitate learning. Other themes, proposed by the students, as learners, referred to Didactic Communication; Correct assessment; Combating aggression in pre-university education.

Following the didactic activities, for a quantitative illustration of the effects of the experimental measures on the quality of the students' results, we resorted to

comparing the grades obtained by our subjects in two moments of the assessment. Spearman's Rho is a non-parametric test used to measure the strength of association between two variables, where the value r = 1 means a perfect positive correlation and the value r = -1 means a perfect negative correlation. In the case of applying this statistical test to the results of the students in the sample, we obtained $r_s = 0.4607$, p (2-tailed) = 0. Thus, from a statistical point of view, the association between the variables is considered significant. In statistical testing, string X was represented by the grades obtained by the 96 students in the first assessment (series I), and string Y was represented by the grades obtained by the same sample in the second assessment (series II). From the detailed calculations in Table 1, it appears that the grades covary, in an increasing way, which validates the hypothesis regarding the beneficial effects of awareness and support intervention on obtaining the emotional well-being of the trainees.

Table 1. Comparative results obtained by the students in assessments

Times of assessment/Series	Average of grades per each series	Correlation of grades in series I and II
I	Mean 8.85	X Ranks Mean: 48.5 Standard Dev: 26.34
II	Mean 9.35	Y Ranks Mean: 48.5 Standard Dev: 25.21
		Combined Covariance = 29063 / 95 = 305.93 R = 305.93 / (26.34 * 25.21) = 0.461

Even if the comparative results obtained by the students in the evaluations indicate progress, because we are referring to a natural micro-experiment, where other external variables that could intervene (including the maturation of the students) could not be isolated, the results they obtained must be interpreted under this reserve, of the impossibility of generalization, especially since they belonged to a small sample, in a short period of time.

6. Discussions and conclusions

Current students have been subjected, due to the COVID-19 pandemic, to an ad-hoc change process in the organization, conduct and completion of the academic study programs. The students are aware of the need for changes in their training, but from their perspective, even if, within the focus groups that were held, they formulated a series of viable proposals, the curricular, methodological and managerial solutions are not always coherent, unitary, because they can emerge only after a good knowledge and comparison of the theories, practices or experiences accumulated during this period and in the following years.

It is true that, compared to classical training, online training promotes values that modern European education has in mind: democracy, pluralism, tolerance,

stimulation of dialogue, conflict resolution, values that are subsumed into the culture of the new generation, at the same time being elements of adaptation and students' affirmation. That is why the types of learning passed around more recently, at the European level - cooperative, experiential, reflective learning - were clearly appreciated as useful for ensuring well-being as they were more approved than those existing in classical learning, mostly reproductive. However, if given a choice between the two education options (face-to-face or online), our subjects leaned more in favor of face-to-face education and concluded that a viable option is blended instruction. This perspective of blended learning (Banihashem *et al.,* 2023) represents an approach to training that would bring a balance between the concept of expanding digitization and that of maintaining didactic activities through which students authentically relate to their peers and trainers.

In the future, we believe that a concern for knowing and improving the well-being of teachers or educational management could bring additional explanations, more clearly completing the entire socio-affective context that influences the instructive-educational field at its various levels.

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L'ACCOMPAGNEMENT DES ENSEIGNANTS NOUVELLEMENT RECRUTÉS EN CLASSE POSTPANDÉMIQUE : EXPÉRIENCE, TEMPORALITÉ, COMPLEXITÉ & SINGULARITÉ*

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Résumé

Une formation d'accompagnement à distance des enseignants universitaires nouvellement recrutés est adoptée par la tutelle en Algérie durant la période postpandémique. Ce dispositif représente une invitation aux enseignants à renouveler leurs modes d'action et à redéfinir leur pratique. Cette approche de formation représente pareillement une véritable plateforme d'apprentissage en ligne qui encourage les échanges entre enseignants et étudiants, ainsi que la collaboration et l'entraide entre les étudiants.

La substance de cette contribution vise à mettre en évidence notre expérience, dans ce cadre, à créer un cours en ligne intitulé "Observation de Pratiques Pédagogiques" sur la plateforme Moodle, avec de nouvelles stratégies d'apprentissage. Les retours positifs des testeurs confirment le succès de cette nouvelle approche éducative. Via ce dispositif, nous avons pu améliorer nos compétences techniques en exploitant une variété de supports mis à notre disposition.

Cet accompagnement a été une expérience d'assistance pédagogique et une mise en situation réelle d'utilisation des plateformes. Elle nous a permis de combiner des activités collaboratives avec un apprentissage plus individualisé, en personnalisant les parcours d'apprentissage selon les besoins des étudiants. De plus, elle nous a aidés à développer notre esprit de synthèse, permettant ainsi aux étudiants d'apprendre sans être contraints de se rendre fréquemment à l'université.

Mot-clés : *Accompagnement ; Expérience ; Temporalité ; Complexité ; Singularité.*

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ACCOMPANIEMENT FOR NEWLY RECRUITED TEACHERS IN THE POST-PANDEMIC CLASSROOM: EXPERIENCE, TEMPORALITY, COMPLEXITY & SINGULARITY

Abstract

Remote support training for newly recruited university teachers has been adopted by the supervisory authority in Algeria during the post-pandemic period. This system represents an invitation to teachers to renew their modes of action and redefine their practice. This training approach also represents a real online learning platform that encourages exchanges between teachers and students, as well as collaboration and mutual support between students.

The substance of our contribution aims to highlight our experience, in this context, to create an online course entitled "Observation of Pedagogical Practices" on the Moodle platform, with new learning strategies.

Positive feedback from testers confirms the success of this new educational approach. Via this device, we were able to improve our technical skills by exploiting a variety of media available to us.

This support was an experience of educational assistance and a real situation of using the platforms. It allowed us to combine collaborative activities with more individualized learning, customizing learning paths to student needs. Moreover, it helped us to develop our spirit of synthesis, thus allowing the students to learn without being constrained to go frequently to the university.

Key words: *Accompaniment; Experience; Temporality; Complexity; Singularity.*

1. Piste vers la recherche

Dans la conjoncture actuelle, surtout durant la période suivant la pandémie, la digitalisation n'est plus simplement un luxe ou une méthode facultative dans la société en miniature, mais plutôt une nécessité impérieuse.

L'utilisation des ressources numériques est devenue une exigence concrète (Djediai & Miloudi, 2023, p. 1333) imposée par les enjeux cruciaux et les défis majeurs auxquels l'enseignement et l'apprentissage sont confrontés dans leur forme actuelle, principalement axée sur les interactions.

Lesdites interactions sont constamment menacées par d'éventuels bouleversements et diverses crises, telles que la situation mondiale de propagation du Covid-19. L'objectif serait donc de montrer que le numérique n'est plus un outil méthodologique à choisir, mais un besoin qui s'impose.

Aujourd'hui, il est important aussi que les universités en Algérie prennent position concernant la mise à jour de l'enseignement supérieur, en tenant compte des évolutions dans les méthodes pédagogiques et d'apprentissage observées à l'échelle internationale. Cette transition nécessite une adaptation des fondements de l'université pour relever ce défi (MESRS, 2023, p. 1).

2. Choix du sujet

Le choix du sujet nous a été inspiré par des critères personnels, socioprofessionnels, universitaires, académiques et objectifs à la fois. Primo, notre perspective dans le domaine de recherche numérico-didactico-pédagogique. Secundo, l'intérêt accordé à la digitalisation notamment en classe de langue, Tertio, le manque d'écrits traitant la thématique en question dans la région d'El-Oued.

3. Angle de vision

Le contexte général de la présente contribution scientifique est à la fois méthodo-numérico-didactico-pédagogique. Le champ de réflexion de notre travail est la Recherche – Évaluation (Mounir M. Touré, 2007, p. 14) en didactique de différentes disciplines.

4. Question nodale

Nous ambitionnons via la présente contribution de trouver d'éléments de réponse à la question nodale suivante :

Comment et dans quelle mesure l'université algérienne a adopté l'accompagnement des enseignants pour répondre aux défis d'une salle de classe dans l'ère postpandémique ?

Une problématique pareille qui se subdivise à son tour à des questions secondaires.

Quelles nouvelles compétences sont essentielles pour les enseignants afin de mieux naviguer dans cette nouvelle réalité postpandémique ?

Quels outils technologiques ou pédagogiques peuvent être intégrés pour soutenir les enseignants dans l'enseignement hybride ou à distance ?

5. Soubassements théoriques contextualisés

Afin de pouvoir mettre l'accent sur l'accompagnement des enseignants nouvellement recrutés au sein de l'enseignement supérieur en Algérie, et attirer l'attention des lecteurs du présent article quant à la formation, l'accompagnement, l'auto-apprentissage, etc. il paraît pertinent d'aborder ce contexte en commençant par le soubassement théorique afin de stabiliser davantage les concepts auxquels se rapporte la présente étude.

Le concept de formation se substituait à une diversité de formes d'interventions que rappelle Agnès Braun dans son livre intitulé Enseignants et/ou Formateurs : *« cours d'adultes, instructions d'adultes, éducation des adultes, éducation permanente, éducation récurrente…, perfectionnement des connaissances, éducation populaire, éducation ouvrière, animation socioculturelle, etc. »* (Braun, 1989, pp. 25 - 26).

Pour ce qui est de formation, elle consiste à guider un groupe spécifique d'adultes, désigné comme la « *population de départ* », depuis un point de départ initial vers un point d'arrivée prévu, en utilisant un système pédagogique qui comprend divers moyens (Beau, 2015, p. 23). Cela implique également d'éveiller la

conscience des stagiaires (les enseignants nouvellement recrutés dans notre contexte) quant à leur progression. Ces moyens, mentionnés par Beau, englobent :

D'abord, les méthodes pédagogiques employées par le formateur, telles que les présentations didactiques, l'étude de cas et les simulations. Ensuite, les outils pédagogiques à disposition, comme les caméras, les tableaux blancs. En outre, les connaissances à transmettre, soit le contenu à enseigner. De plus, les attitudes pédagogiques du formateur, incluant les approches actives et la non-directivité. Enfin, l'environnement entourant le stagiaire et le formateur, comprenant les opportunités d'application, le soutien de la hiérarchie et le mode de financement." La prise en compte des besoins du public avant d'entamer toute formation est indispensable (Miloudi, 2022, p. 91).

Le processus d'accompagnement, à son tour, se définit par divers moyens et approches, notamment le soutien, l'aide, la mise en place des prérequis nécessaires, la création de connexions entre ce qui est connu et ce qui est inconnu, ainsi que le transfert des acquis (Miloudi & Bektache, 2020, p. 10). Cette approche est caractérisée par le soutien socioconstructiviste, impliquant l'assistance des individus en phase d'apprentissage afin de faciliter la construction de leurs connaissances. (2) Cela inclut l'activation de leurs connaissances préalables, l'établissement de liens avec les nouvelles informations et la capacité à appliquer leurs apprentissages dans des situations réelles. Ce processus suppose une interaction entre la personne accompagnatrice et celle qui reçoit l'accompagnement (Lafortune & Deaudelin, 2002, p. 27).

6. Expérience du terrain

La formation à distance des enseignants universitaires nouvellement recrutés est une nouvelle forme particulière d'enseignement à distance adoptée dans le pays durant la période postpandémique à côté de la formation pédagogique préparatoire assurée en présentiel. Dans ce contexte, l'enseignant est formé et accompagné.

Dans le but de répondre aux exigences du développement rapide du télé-enseignement auprès de l'enseignement supérieur, La présente formation généralisée à l'échelle nationale en Algérie est mise en place par l'Université de Constantine 1 (390 kms à l'est de la capitale) pour faciliter la tâche de la partie guidante et celle de la partie guidée lors de la mise en place des cours ; de stocker leurs contenus pédagogiques et à les retrouver plus facilement.

Ce dispositif de formation à distance représente donc une vraie plateforme d'apprentissage en ligne. Ce type de formation aide également les échanges, entre les enseignants et leurs étudiants. Il met en exergue la pédagogie collaborative et coopérative.

Il représente aussi l'espace incontournable d'entraide, et de télécollaboration entre les étudiants (Miloudi & Zemouli, 2020, p. 10).

À partir de là, cette formation comprend une série d'ateliers qui garantissent la formation numérique de qualité, Qu'en est-il de ces ateliers ? Leurs objectifs ? Leurs compétences escomptées ?

À l'issue du premier atelier qui dure quarante-cinq jours, l'enseignant universitaire nouvellement recruté sera capable d'utiliser la plateforme Moodle de l'université en mode étudiant. Il sera également en mesure de produire un support pédagogique en utilisant les chaînes éditoriales, à l'image de « *Opale* ». Cette dernière permet de rédiger des contenus pédagogiques structurés. L'enseignant sera capable donc de générer les différents formats du support pédagogique (Papier, Web et Scorm). Les connaissances antérieures recommandées sont les fonctions de base d'un ordinateur et un logiciel de bureautique. Quatre activités interactives concrétisent l'effort à fournir par l'enseignant.

En ce qui concerne le deuxième atelier relatif à la conception d'un cours pour un enseignement hybride, l'enseignant nouvellement recruté sera en mesure de maîtriser la structuration pédagogique d'un cours en ligne. Il est invité à connaître également les constituants d'un cours en ligne. Il aura pareillement la possibilité d'éditer les objectifs d'un cours et de comprendre la différence entre l'approche par les compétences et la pédagogie par objectifs. Il sera aussi capable de connaître le principe de remédiation et de concevoir des activités d'apprentissage. Cet atelier dure quarante jours.

Quant au troisième atelier qui dure trente-cinq jours, il est relatif à la méthodologie de conception d'un cours pour un enseignement hybride. Ses objectifs globaux sont la connaissance des étapes de conception d'un cours en ligne. La généralisation du format SCORM pour un LMS Moodle ; l'utilisation de la publication courte-standard, l'exploration de la plateforme Moodle : bloc, calendrier, etc. ; la maîtrise du mode concepteur sous Moodle et l'utilisation du mode édition. L'insertion des ressources sous Moodle : Fichier, étiquette, page, etc. L'insertion des activités et des tests : Forum, chat, devoir,…

En ce qui concerne le quatrième atelier. Il s'intitule la conception d'un Mooc. Ce dernier cible la maîtrise de la plateforme Edx et l'initier à "*Studio*" ainsi que la mise en place du Mooc. La conception d'un scénario d'apprentissage et la compréhension des fonctions d'un tuteur en ligne et la maîtrise des différentes formes d'évaluation ainsi que la compréhension des différentes méthodes de la pédagogie active qui sont évoqués au sein de ce dernier atelier qui dure quarante-deux jours.

Quant aux critères d'évaluation de cours en ligne, il s'agit d'une grille qui englobe plusieurs aspects didactico-pédagogiques, confectionnée grâce à une réelle pédagogie collaborative par groupe des stagiaires qui prend en considération les paramètres suivants qui ne sont pas exhaustifs :

a) Les particularités du système d'entrée/système de sortie ;
b) La progression interne du cours proposé ;
c) Les tâches à faire par la partie guidante et la partie guidée ;
d) Contrôle des connaissances antérieures ;
e) Centration des activités sur l'apprentissage ;
f) Projection directe sur les cours pédagogiques enseignés ;
g) Progression logique du cours & démarches mises en œuvre ;
h) Interventions pertinentes de l'enseignant pendant l'activité ;
i) Association des étudiants dans leur formation ;

j) Existence de l'horizontalité Interactive ;
k) Possibilité de suivre individuellement le cours ;
l) Sécurité assurée via l'accompagnement ;
m) Objectifs généraux et intermédiaires précisément énoncés ;
n) Objectifs spécifiques nettement énoncés ;
o) Compétences visées sont visiblement énoncées ;
p) Correspondance entre objectifs & contenu ;
q) Exactitude des informations transmises ;
r) Gestion correcte du temps ;
s) Traitement des erreurs (Prise en charge des erreurs) ;
t) Réalisation des projets d'équipe ;
u) Existence des fréquences du contrôle ;
v) Activité de remédiation à chaud et pertinence des tests proposés ;
w) Gestion logique de l'hétérogénéité au sein de l'évaluation ;
x) Dispositifs de remédiation et de télécollaboration ;
y) Transfert de connaissances dans l'extra-université ;
z) Réinvestissement des acquis et développement de l'autonomie.

Une formation pareille facilite la tâche au public nouvellement recruté dont nous faisons partie. Elle familiarise aussi cette catégorie en la matière. Notre expérience consiste à mettre en place un cours en ligne intitulé : Observation de Pratiques Pédagogiques sous la plateforme Moodle de l'université d'El-Oued ainsi que l'utilisation de la présentation SCORM avec des stratégies efficace d'apprentissage (1).

Ce travail mis en ligne est déjà positivé par les experts-testeurs (3) représentant trois catégories différentes : professeur des universités, maître de conférences et étudiant. Il s'agit d'une tentative satisfaisante qui concrétise une nouvelle technologie éducative en faveur de l'innovation pédagogique.

Cette période de formation a donné au public visé l'opportunité de fusionner l'action concrète avec les retours d'information, de mêler des activités collaboratives à un enseignement plus axé sur l'individu, et d'adapter les chemins d'apprentissage en accord avec les besoins spécifiques des apprenants.

Elle a permis également aux enseignants nouvellement recrutés de réaliser l'esprit de synthèse. Ce qui permet à l'étudiant d'apprendre à apprendre sans être obligé d'aller souvent à l'université.

Selon les testeurs, nos cours ont été dispensé de manière exemplaire, l'enseignant suivant avec rigueur le plan méthodologique et informatif établi. Il constitue une ressource très enrichissante pour les étudiants et peut sans aucun doute être pris comme modèle dans l'évaluation pédagogique.

La création de ce cours, selon les testeurs, s'est alignée avec le titre du module. L'enseignant a su nous immerger directement dans l'observation des méthodes pédagogiques, ce qui rend le contenu du module très compréhensible et accessible pour les étudiants.

Pour stimuler la motivation, nous avons sollicité de chaque étudiant de Master 1 la rédaction de son parcours linguistique pour exploiter nos acquis préalables. Cette démarche, centrée sur l'apprentissage, nous a permis de vérifier efficacement les connaissances préexistantes de nos étudiants.

Les cours mis en ligne suivent une structure interne très cohérente, tout comme les approches pédagogiques utilisées. Nous, lors de nos cours, accordons une attention particulière à garantir la maîtrise linguistique des étudiants, en adoptant une approche interactive horizontale qui implique tout le monde (Tagliante, 2001, p. 7).

Les objectifs, qu'ils soient généraux, intermédiaires ou spécifiques, sont clairement accomplis. En ce qui concerne la correction des lacunes, nous intervenons instantanément et de manière contemporaine pour résoudre tous les problèmes identifiés, avec un style à la fois moderne et éthique. À la clôture de chaque session, nous assignons aux étudiants un travail à faire chez eux pour prolonger les activités et garantir l'application des connaissances acquises.

Les grilles d'évaluation élaborées pour chaque moment de l'enseignement sont extrêmement détaillées selon les testeurs, car elles répertorient minutieusement tous les petits éléments concernant les méthodes de supervision dans un ordre chronologique précis. Ce qui rend ces grilles uniques, c'est la sélection minutieuse des critères d'évaluation qui scrutent tous les éléments constitutifs de la situation pédagogique proposée.

Les moments d'échanges interactifs entre les deux acteurs de l'enseignement se déroulent principalement en ligne, via des forums de discussion, des quiz et des exercices sous forme de rapports. Ces activités offrent aux étudiants l'opportunité de développer leurs compétences pratiques à distance et d'initier leur processus d'apprentissage par le biais de situations problématiques avant même de s'engager sur le terrain.

Une synthèse des relations entre tous les intervenants pédagogiques est exposée préalablement sous forme d'un schéma. Celui-ci agit à la fois comme un rappel du contenu du module et comme un résumé des éléments essentiels de l'environnement de la salle de classe.

Du point de vue de la méthodologie, la progression des éléments essentiels du module suit une logique de conception axée sur les projets. Bien que flexible, cette approche n'est pas toujours réversible.

Le contenu du cours a réussi à atteindre les objectifs opérationnels initialement fixés par l'enseignant. Le déroulement des différentes sections s'accompagne d'une série d'activités et d'exemples pratiques, tandis que les problèmes soulevés favorisent de manière pertinente le transfert des connaissances acquises.

7. Conclusion

Notre expérience du terrain valorise l'accompagnement et montre ses mérites dans un environnement réel et virtuel. Les enseignants nouvellement recrutés ne sont pas hors de tout champ social. Ils partagent les pratiques répandues dans la société postpandémique caractérisée essentiellement par un accompagnement ayant donné des résultats positifs pour les différents partenaires de la situation d'enseignement-

apprentissage. Les nouvelles compétences annoncées par André de Peretti, à savoir : expérimentateur, réalisateur, clinicien, utilisateur, organisateur, méthodologue et consultant (Muller, 2012, p. 32) via sa visualisation graphique du métier trouvent leurs places prépondérantes dans ce contexte.

Notice bibliographique

Mounir MILOUDI est docteur ès Sciences du langage, diplômé de l'université de Boumerdès (Algérie), Faculté des Sciences. Il est enseignant-chercheur au département de français de l'université d'El-Oued. Il assure des modules de didactique. Il chapeautait la circonscription d'El-Oued-Français du cycle primaire entre septembre 2008 et octobre 2021. Ses travaux de recherche s'inscrivent dans le champ sociodidactique. Il est l'auteur ou co-auteur de plus d'une quizaine d'articles scientifiques publiés à : Revue Studii şi cercetări filologice, Synergies Algérie, Community Practitioner, Linguistique appliquée, El-Bahith, Etudes & recherches humaines & sociales, Ex-Professo, Psychology & Education et Paradigmes. Il est concepteur de plusieurs manuels parascolaires (Parlons français, Bravo Amine, En net Progrès, Formidable, Allez ! Courage, Simple comme bonjour, etc.). Il est reviewer au niveau de plusieurs revues classées. Il a également participé aux plusieurs manifestations scientifiques internationales et nationales (Alger 2, Batna 2, Barika, Bejaïa, Beyrouth, Biskra, Boumerdès, Bousaâda, Constantine, Djelfa, El-Oued, Kaïrouan, Lyon, Oran, Mongolie, Mostaganem, Ouargla, Québec, Relizane, Rennes 2, Rouen Normandie, Timișoara, Tlemcen et Tizi-Ouzou).

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(2) Le lien des cours en ligne de l'enseignant auteur de cet article est le suivant : https://elearning.univ-eloued.dz/course/view.php?id=7352

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ÉDUCATION 5.0 : PERSPECTIVES CROISÉES DU JAPON ET DU ZIMBABWE*

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Résumé

Après la pandémie du COVID-19, le monde a massivement embrassé la transition vers un environnement numérique, engendrant des répercussions significatives dans divers secteurs, dont l'éducation. Le développement technologique révolutionnaire à l'origine de l'industrie dite 5.0 représente un point de rupture invitant à la révision du modèle de développement économique global pour le fonder désormais, sur la connaissance au lieu de l'industrie.

Le concept de l'éducation 5.0 a émergé dans ce contexte pour offrir un enseignement humanisé centré sur l'apprenant, favorisant son développement social et émotionnel, basé par ailleurs, sur l'utilisation de technologies avancées telles que l'intelligence artificielle et l'Internet des objets (IoT). Ce modèle éducatif, recommandé par des organisations telles que l'UNESCO et l'UNICEF, promeut une approche holistique et multidimensionnelle de l'apprentissage, visant à former des citoyens et travailleurs responsables.

Cette étude se propose d'examiner l'adoption de l'éducation 5.0 dans le contexte d'un pays développé le Japon, et d'un pays en voie de développement le Zimbabwe avec une approche comparative. Celle-ci prend appui sur une grille d'analyse évaluant la performance d'apprentissage, le bien-être des apprenants et l'acquisition des valeurs du travail. En analysant les retours d'expérience de ces deux pays, cette étude vise à mieux comprendre comment l'éducation 5.0 peut être adaptée à des contextes différents pour répondre aux besoins de l'économie de la connaissance et la société de connaissances.

Mots-clés : *Éducation 5.0 ; Économie de la connaissance ; Société de la connaissance ; Enseignement humanisé ; Analyse comparative.*

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EDUCATION 5.0: CROSS-PERSPECTIVES FROM JAPAN AND ZIMBABWE

Abstract

After the COVID-19 pandemic, the world massively embraced the transition to a digital environment, generating significant repercussions in various sectors, including education. The revolutionary technological development that has given rise to the so-called 5.0 industry represents a turning point that calls for a revision of the global economic development model, basing it henceforth on knowledge instead of industry. The concept of Education 5.0 has emerged in this context to offer a humanized education centered on the learner, fostering his or her social and emotional development, and based on the use of advanced technologies such as artificial intelligence and the Internet of Things (IoT). This educational model, recommended by organizations such as UNESCO and UNICEF, promotes a holistic, multidimensional approach to learning, aimed at training responsible citizens and workers. This study examines the adoption of Education 5.0 in the context of a developed country, Japan, and a developing country, Zimbabwe, using a comparative approach. This is based on an analytical grid assessing learning performance, learner well-being and the acquisition of work values. By analyzing feedback from these two countries, this study aims to better understand how Education 5.0 can be adapted to different contexts to meet the needs of the knowledge economy and society.

Key words: *Education 5.0; Knowledge economy; Knowledge society; Humanized education; Comparative analysis.*

1. Introduction

Après la pandémie du COVID-19, les systèmes éducatifs nationaux se trouvent dans l'impératif de se réinventer à mesure que l'on assiste à la transition de l'économie industrielle à une économie de la connaissance. Powell *et al.* (2004) définissent l'économie de la connaissance, ou "knowledge Economy" en anglais, comme un système économique dans lequel la production de biens et de services repose principalement sur des activités à forte intensité de connaissances qui contribuent au progrès de l'innovation technique et scientifique (Powell *et al.,* 2004, p. 201). Cette évolution est souvent associée à la révolution industrielle 5.0, un mouvement axé sur la révolution de l'environnement industriel mondial dans le but de prioriser le bien-être humain et la durabilité. Elle vise à utiliser des solutions innovantes non seulement pour créer de l'emploi et favoriser la croissance économique, mais aussi pour promouvoir la prospérité générale et la durabilité de l'humanité dans son ensemble (Leng *et al*., 2022, p. 282). En effet, l'Industrie 4.0, reposait sur la technologie et la minimisation de l'intervention humaine, en donnant la priorité à l'utilisation des machines. Cependant, l'Industrie 5.0 est arrivée pour créer un équilibre entre les machines et les humains ayant pour but de faire une combinaison optimale de technologies avancées et de spécialistes hautement qualifiés dans le but d'assurer le bien être humain.

L'évolution constante des technologies est à l'origine de bouleversements majeurs dans l'éducation, donnant naissance à l'éducation 5.0, une approche novatrice redéfinissant fondamentalement le processus éducatif. Fondée sur des technologies avancées telles que l'intelligence artificielle, le Big Data et l'Internet des objets (IoT), l'éducation 5.0, selon Alharbi (2023, p. 917), est un processus d'apprentissage impliquant toutes les parties prenantes, le personnel enseignant, les étudiants et l'administration. Ce qui la distingue, c'est son engagement envers l'humanisation de l'enseignement, considérant chaque apprenant comme un individu complet avec des valeurs, des croyances et des capacités uniques. L'éducation 5.0 cherche à concilier technologie et humanisation pour offrir une expérience d'apprentissage personnalisée, interactive et axée sur le développement de compétences clés.

Le Fonds des Nations Unies pour l'Enfance (UNICEF, 2017, p. 1) pour le Moyen-Orient et l'Afrique du Nord a lancé en 2015, l'initiative Life skills and citizenship education (LSCE) qui vise à aider les pays de cette région à améliorer l'apprentissage, en vue de mieux investir dans le développement individuel, social et économique. En effet, l'initiative Life skills and citizenship education (LSCE) propose une définition holistique de l'éducation aux compétences de vie et à la citoyenneté, mettant en avant la considération de l'apprenant dans sa globalité, visant à autonomiser les individus pour réussir dans leur vie personnelle et au travail. Dans un contexte d'éducation 5.0, la problématique qui se pose est : Comment réinventer les systèmes éducatifs en plaçant l'apprenant au centre de l'apprentissage, tout en conservant une approche humaine de l'enseignement et en tirant parti des technologies avancées ?

Cette étude sera consacrée dans un premier temps, à l'exploration du concept d'éducation 5.0, en mettant particulièrement l'accent sur ses piliers fondamentaux, à savoir la révision des rôles traditionnels de l'enseignant et de l'apprenant. Il sera examiné dans un second temps, les expériences de sa mise en œuvre dans deux pays, le Japon et le Zimbabwe, de niveaux économique, technologique et culturel différents voire, contrastés. Le Japon est un pays développé, réputé pour son innovation dans le domaine éducatif et sa technologie avancée. Il ambitionne moderniser l'ensemble de son système éducatif, du primaire à l'enseignement supérieur, en intégrant les technologies avancées. Le Zimbabwe est un pays en développement, confronté à des défis socio-économiques, déploie des efforts significatifs pour mettre en œuvre l'éducation 5.0, en se concentrant particulièrement sur l'enseignement supérieur.

2. L'éducation 5.0 : un nouveau paradigme éducatif pour repenser le rôle de la pédagogie

2.1. Soubassements de l'éducation 5.0

L'éducation 5.0 est un concept futuriste, qui vise à intégrer des technologies de l'information et de la communication avancées dans le système éducatif pour améliorer l'expérience d'apprentissage et éliminer les obstacles à l'éducation individuelle. Ainsi, l'un des objectifs fondamentaux de l'éducation 5.0 est de

promouvoir l'apprentissage personnalisé, la collaboration et le bien-être grâce à l'utilisation d'outils numériques tels que l'intelligence artificielle, la réalité virtuelle (RV) et l'Internet des objets (Lantada, 2020, p. 1822). L'éducation 5.0 est une méthode très innovante, qui peut permettre au personnel enseignant, aux étudiants et à l'administration de passer au niveau supérieur de l'adoption de la technologie dans un environnement d'apprentissage. Le processus d'apprentissage est établi par l'apprenant et piloté et contrôlé par l'apprenant (University Teknologi Mara, 2019, p. 95). Toutes les parties prenantes impliquées, telles que le personnel enseignant, les étudiants et l'administration, définissent l'apprentissage comme étant le cœur de l'éducation 5.0 (Alharbi, 2023, p. 917), lequel est axé sur l'apprenant. En effet, l'apprentissage est lié à l'étudiant ou à l'apprenant, axé sur l'apprenant, démontré par l'apprenant, et dirigé par l'apprenant (University Teknologi Mara, 2019, p. 95). De plus, l'Éducation 5.0 met l'accent sur le développement de compétences du 21e siècle telles que la pensée critique, la créativité et la résolution de problèmes, plutôt que sur l'apprentissage par cœur, et elle intègre des expériences immersives dans les salles de classe grâce à l'utilisation d'applications de réalité augmentée et de réalité mixte (Kamal *et al*., 2019, p. 192). Cependant, ce qui distingue particulièrement l'éducation 5.0, c'est son engagement envers l'humanisation de l'enseignement. Cette notion d'humanisation de l'enseignement se différencie clairement de l'éducation 4.0, qui était d'avantage centrée sur l'automatisation et la technologie.

L'éducation 5.0 repose sur plusieurs piliers qui redéfinissent l'apprentissage, mettant l'accent sur l'approche holistique de l'éducation, l'apprentissage individualisé, la technologie de pointe, et les compétences du 21e siècle.

2.1.1. Approche holistique de l'éducation

L'approche holistique de l'Education 5.0 s'inspire de la philosophie d'Edgar Morin (Morin, 2000, p. 14) en reconnaissant que l'être humain est une unité complexe ; il est à la fois physique, biologique, psychologique, historique et culturel. C'est cette unité complexe de la nature humaine, qui est complètement désintégrée dans l'enseignement. Dans cette perspective, l'éducation va au-delà de la simple acquisition de connaissances disciplinaires. Elle vise à prendre en compte l'apprenant dans sa globalité, en intégrant des aspects sociaux, émotionnels et scolaires, afin de viser le développement personnel, la préparation aux défis du monde réel, et la promotion du bien-être de l'individu. Cette approche éducative cherche à préserver et à renforcer l'unité complexe de la nature humaine plutôt qu'à la désintégrer à travers des disciplines fragmentées.

2.1.2. Apprentissage individualisé

L'individualisation de l'apprentissage, selon Vanderspelden (Vanderspelden, 2005, p. 124), implique l'exécution autonome des tâches, mettant en avant l'autonomie, la personnalisation en fonction du rythme de chaque apprenant, la responsabilisation, la confiance en soi et l'autoévaluation. Contrairement à la pédagogie traditionnelle, où les tâches individuelles peuvent souvent être perçues comme un travail collectif réalisé individuellement (Bouchet, 1948), l'Éducation 5.0, valorise une approche où chaque apprenant peut progresser à son rythme, bénéficiant d'une personnalisation d'apprentissage adaptée à ses besoins spécifiques grâce aux

technologies éducatives avancées (Raj *et al*., 2022). Cette approche permet une expérience d'apprentissage individualisée, accessible de n'importe où et à tout moment, avec l'automatisation du processus d'enseignement et le rôle persistant du tuteur humain (Bhutoria, 2022).

2.1.3. Les avancées technologiques

L'éducation 5.0 représente la cinquième révolution industrielle dans le domaine éducatif, exploitant des technologies numériques avancées pour éliminer les obstacles à l'apprentissage, améliorer les méthodes d'enseignement et favoriser le bien-être des apprenants. Cette révolution se manifeste dans l'utilisation de salles de classe intelligentes et d'environnements d'apprentissage équipés de technologies telles que des tableaux et des écrans interactifs intégrant la réalité virtuelle (Koohang *et al*., 2023). Cela offre une expérience immersive, où les apprenants peuvent interagir avec cet environnement artificiel comme s'ils étaient physiquement présents, bien que tout se passe virtuellement. L'éducation 5.0 applique également l'intelligence artificielle et l'apprentissage automatique, personnalisant ainsi l'expérience d'apprentissage de chaque élève grâce à des logiciels adaptatifs, qui ajustent le programme en fonction des performances et des besoins individuels. L'analyse des données massives est utilisée pour suivre la progression des élèves, identifier les domaines nécessitant un soutien supplémentaire, et permettre aux enseignants d'adapter leurs plans de cours. De plus, l'analyse prédictive identifie les étudiants à risque, permettant aux éducateurs d'intervenir et de fournir un soutien approprié (Wahdan *et al*., 2021).

2.1.4. Les compétences du 21ème siècle

Les objectifs de l'éducation à l'échelle mondiale visent à préparer les jeunes en tant que futurs citoyens à développer leurs connaissances et compétences académiques et professionnelles. Ces objectifs, définis dans les documents de programme tels que les programmes scolaires et les cadres nationaux (OCDE, 2019), se divisent en objectifs académiques à court terme, axés sur les accomplissements académiques immédiats, et d'objectifs à long terme, visant l'épanouissement global des apprenants. Selon les études du Programme international pour le suivi des acquis des élèves (PISA), les critères socio-économiques tels que le niveau de revenu, le statut professionnel des parents, l'accès à des ressources éducatives sont des facteurs clés influençant les compétences des apprenants (Schröder, 2019). Pour relever les défis actuels, l'accent sur la qualité de l'éducation est crucial. Cependant, il existe un consensus sur le fait que les systèmes éducatifs ne parviennent pas suffisamment à doter tous les élèves des compétences nécessaires (OCDE, 2019). Les écoles innovantes mettent l'accent sur les compétences du 21e siècle, telles que la communication, la collaboration, la créativité et la pensée critique. Les programmes scolaires, souvent axés sur les compétences, influencent la pédagogie, offrant des alternatives à la conception de l'apprentissage (Peterson, 2018).

2.2. Révision des rôles des acteurs éducatifs

La redéfinition des rôles des acteurs éducatifs dans le contexte de l'Éducation 5.0 est cruciale pour répondre aux besoins changeants de la société moderne.

L'enseignant devient ainsi, un spécialiste en ressources, jouant un rôle essentiel dans la facilitation de l'accès à l'information et guidant les apprenants dans son utilisation efficace (Alharbi, 2023, p. 919). De plus, l'enseignant se transforme en facilitateur et mentor, encourageant l'autonomie et la motivation des apprenants à prendre le contrôle de leur propre apprentissage. Par ailleurs, L'enseignant se doit de rester ouvert à l'apprentissage continu, adoptant à son tour une posture d'apprenant favorisant un environnement d'apprentissage dynamique (Alharbi, 2023, p. 920). Dans cette dynamique éducative, les apprenants assument un rôle proactif, caractérisé par l'autonomie, la responsabilité et l'engagement. Ils sont encouragés à définir leurs objectifs, à planifier leur parcours et à gérer leur temps de manière efficace, cultivant ainsi des compétences essentielles d'auto-direction. L'intégration généralisée de la technologie est également un élément clé de l'Éducation 5.0, incitant les apprenants à utiliser des outils numériques, des plateformes en ligne et des ressources numériques pour développer leurs compétences en recherche et utilisation de l'information en ligne. De plus, l'accent est mis sur le développement de compétences de vie, telles que la pensée critique, la résolution de problèmes, la communication, la créativité et la collaboration, en alignement avec l'initiative Life Skills and Citizenship Education du Fonds des Nations Unies pour l'Enfance pour le Moyen-Orient et l'Afrique du Nord. Ces compétences sont reconnues comme essentielles pour réussir dans la vie quotidienne, progresser académiquement et professionnellement, ainsi que pour s'épanouir sur le plan social (UNICEF, 2017, p. 8).

3. Implémentation de l'éducation 5.0 : étude de cas du Japon et du Zimbabwe

3.1. Méthodologie

Pour amorcer l'étude comparative de l'implémentation de l'éducation 5.0 au Japon et au Zimbabwe, il est essentiel de définir la méthodologie et le cadre d'analyse qui sous-tendent notre étude comparative. Ce cadre vise à évaluer la démarche, les moyens, les avantages et les défis de l'implémentation de l'éducation 5.0 dans ces deux contextes nationaux distincts. Le Japon, reconnu comme un leader mondial en innovation éducative et technologique, a fortement investi dans le développement de l'intelligence artificielle (IA) avec une augmentation significative des budgets, passant de 58 milliards de yens en 2017 à 131 milliards de yens en 2020. En parallèle, le gouvernement japonais a alloué un budget sans précédent de 1 378,8 milliards de yens pour l'éducation, couvrant divers domaines, dont le numérique et l'IA (Cours des comptes, avril 2023, p. 206). En revanche, le Zimbabwe, en tant que pays en développement, explore des solutions technologiques pour surmonter ses défis éducatifs. La grille d'analyse se concentre sur des aspects tels que la performance d'apprentissage, le bien-être des apprenants, les méthodes d'enseignement, la technologie utilisée, l'adaptation, le suivi et la gouvernance éducative.

3.2. Implémentation de l'éducation 5.0 au Japon

Au Japon, l'implémentation de l'éducation 5.0, initiée vers 2016, vise à métamorphoser le paysage éducatif en préparant intégralement les apprenants aux

défis réels de la vie tout en promouvant leur bien-être. Cette approche novatrice fusionne l'éducation avec des technologies de pointe pour créer une expérience d'apprentissage individualisée de qualité, positionnant ainsi les apprenants pour prospérer dans un futur numérique. Les objectifs clairement définis, les moyens efficaces, le suivi attentif et le pilotage stratégique constituent les piliers de cette révolution éducative. Il convient de noter que cette implémentation englobe tous les cycles éducatifs, marquant ainsi un changement systémique à l'échelle nationale.

3.2.1. Objectifs

Au Japon, l'éducation 5.0 se fixe des objectifs clairs pour moderniser le système éducatif en intégrant des technologies avancées telles que l'intelligence artificielle, la réalité virtuelle et d'autres innovations éducatives. L'un des principaux objectifs consiste à individualiser l'expérience d'apprentissage en intégrant ces technologies de pointe, visant ainsi à offrir une éducation plus adaptative et personnalisée, contribuant au bien-être psychologique et émotionnel des étudiants (OECD, 2015). Le Japon s'efforce également d'intégrer les compétences du 21e siècle dans la totalité des programmes scolaires d'ici 2025 (Daisuke *et al*., 2017). Ces compétences sont jugées essentielles pour préparer les apprenants à un avenir numérique et interconnecté. Cette transition éducative reflète que les ordinateurs peuvent désormais gérer efficacement les connaissances factuelles, permettant aux individus de se concentrer sur l'acquisition de compétences hautement créatives essentielles pour prospérer dans la société 5.0 (Yamada *et al.*, 2021, p. 51). Ce modèle reflète la volonté du Japon d'adopter une approche éducative holistique, intégrant la technologie, les compétences du 21e siècle et la préoccupation centrale pour le bien-être des étudiants dans une vision d'éducation plus adaptée aux besoins contemporains.

3.2.2. Démarche suivie

Le Japon met en œuvre une vision ambitieuse d'éducation, axée sur la révolution de l'enseignement et de l'apprentissage par l'intégration de technologies avancées, dans le cadre de sa quête pour créer une Société 5.0 ultra-intelligente. C'est une société du futur, dans laquelle de nouvelles valeurs et services sont créés en permanence, rendant la vie des gens plus confortable et durable (JapanGov, 2018). L'initiative de mettre en œuvre une Société 5.0 ultra-intelligente est soutenue par une collaboration interministérielle étroite entre plusieurs ministères clés, notamment le ministère de l'Éducation, de la Culture, des Sports, des Sciences et de la Technologie (MEXT), le ministère de l'Économie, du Commerce et de l'Industrie (METI), et le ministère des Affaires intérieures et des Communications (MIC). Le Japon a élaboré une stratégie pluriannuelle pour moderniser son système éducatif en investissant de manière significative dans l'intelligence artificielle et l'éducation. Cette initiative est mise en œuvre avec un suivi continu et en établissant des partenariats industriels.

3.2.3. Moyens mis en œuvre

Le gouvernement japonais, reconnu pour son leadership mondial en innovation éducative et technologique, a substantiellement investi dans le développement de l'intelligence artificielle (IA). Ces investissements ont été

marqués par une augmentation significative des budgets, passant de 58 milliards de yens en 2017 à 131 milliards de yens en 2020. L'objectif principal de ces investissements est de créer des outils d'IA capables de personnaliser l'apprentissage des élèves (Cours des comptes, avril 2023, p. 206). Le gouvernement japonais démontre un engagement significatif en faveur de l'apprentissage en ligne et de l'éducation ouverte pour favoriser l'accès à l'éducation à distance. Un exemple concret de cette initiative est le projet mené par l'Open University of Japan (OUJ). L'OUJ propose des cours en ligne gratuits qui sont ouverts à tous les citoyens japonais, soulignant ainsi la volonté du gouvernement de rendre l'éducation accessible à un public plus large (Iwanaga, 2014). Ce projet s'inscrit dans une perspective d'inclusion et d'accessibilité, alignée sur les principes de l'Education 5.0, qui mettent l'accent sur l'individualisation de l'apprentissage et l'utilisation de la technologie pour offrir des opportunités éducatives flexibles.

Le gouvernement japonais reconnaît que près de 49% des emplois pourraient être remplacés par l'intelligence artificielle dans les 15 prochaines années, ce qui lui a permis de développeré plusieurs initiatives pour préparer les étudiants à un avenir où l'utilisation de l'IA est incontournable. La stratégie s'inscrit dans le cadre de la vision globale de la "Société 5.0". Concrètement, le ministère de l'Éducation, de la Culture, des Sports, des Sciences et de la Technologie (MEXT) mène trois projets principaux (MEXT, 2020).

Le premier projet vise à optimiser l'apprentissage en accumulant les journaux d'étude des étudiants. Ces journaux peuvent inclure des informations sur les activités d'apprentissage, les défis rencontrés, les progrès réalisés, les questions posées, etc. Le concept de GIGA School, promu par le MEXT, prévoit l'organisation d'appareils numériques pour toutes les classes, de l'école primaire au lycée, d'ici la fin de 2022. Ce projet comprend également l'installation de réseaux sans fil dans toutes les écoles secondaires publiques. Ces mutations vers l'éducation numérique, en accordant un accent particulier sur l'éducation en ligne, soutenu par un budget gouvernemental conséquent de 231,8 milliards de yens pour l'année fiscale 2019 (MEXT, 2020). Le deuxième projet a pour but de changer la façon dont les élèves sont évalués pour entrer au lycée. À partir de 2024, une nouvelle matière appelée "l'information" sera incluse dans les examens. Cela signifie que, en plus des matières classiques, les élèves seront également testés sur leur compréhension de l'information, de la science des données et des statistiques. Ils devront montrer qu'ils comprennent comment utiliser et interpréter l'information de manière pratique. Cette modification a été faite pour s'assurer que les élèves sont évalués sur des compétences qui sont vraiment importantes dans le monde d'aujourd'hui, où comprendre et utiliser l'information de manière intelligente est essentiel. Le troisième projet, dans le cadre du développement de compétences résistantes à l'IA, met l'accent sur les compétences fondamentales, y compris la capacité à "Créer de la Nouvelle Valeur", "Prendre des Responsabilités" et "Réconcilier les Tensions et Dilemmes". Ces compétences sont alignées sur le Learning Compass 2030 de l'OCDE, qui vise le bien-être personnel et social d'ici 2030. Le ministère de l'Éducation, de la Culture, des Sports, des Sciences et de la Technologie (MEXT) prévoit d'encourager la réflexion et l'action

des étudiants en utilisant un modèle de cycle d'anticipation, d'action et de réflexion. Il est souligné que les étudiants doivent acquérir des compétences et agir de manière proactive vers le bien-être en 2030, ce qui implique une collaboration avec leurs pairs, enseignants, parents et membres de la communauté (MEXT, 2020). Au Japon, le développement social de l'apprenant revêt une importance croissante, particulièrement dans le contexte de l'évolution vers l'éducation 5.0. Par ailleurs, la santé mentale des étudiants est une des priorités de l'éducation 5.0. À cet effet, des mesures proactives ont été prises par le ministère de l'Éducation pour prévenir le refus d'aller à l'école, la violence entre élèves, et les brimades pouvant conduire au suicide chez les jeunes. Il a introduit, de surcroît, des professionnels tels que les psychologues scolaires et les assistants sociaux scolaires au sein des établissements éducatifs. L'objectif est de créer un environnement propice à l'épanouissement des élèves en offrant un soutien adapté à leurs besoins (Inoue, 2017, p. 46).

3.2.4. Suivi et pilotage

Au Japon, dans le contexte de l'intégration de la programmation dans les écoles élémentaires, une étude intitulée « Qu'ont appris les élèves lors des ateliers de programmation ?» a été menée par (Mori, 2016, pp. 103-106) pour évaluer l'impact des ateliers de programmation. La recherche a été motivée par le fait que les matières de programmation seraient formellement proposées dans les écoles élémentaires au Japon d'ici 2020. Deux groupes d'élèves ont été formés, l'un utilisant "Scratch", un langage de programmation visuel créé pour rendre l'apprentissage de la programmation plus accessible, en particulier aux enfants, pour des projets de programmation graphique. L'autre groupe travaillait avec le petit ordinateur programmable "Cricket" pour créer des objets physiques. L'auteur a décrit en détail les activités menées avec les deux groupes d'étudiants et a recueilli leurs réflexions sur les ateliers. Les résultats ont montré que les étudiants étaient davantage concentrés sur la programmation dans l'atelier Scratch et davantage axés sur divers sujets dans l'atelier Cricket, car ils investissaient plus d'efforts dans la création d'objets physiques. Ces résultats soulignent l'impact positif des initiatives éducatives japonaises en matière d'éducation 5.0, mettant en lumière la manière dont les élèves s'engagent et apprennent dans ces nouveaux environnements éducatifs.

Une étude en provenance du Japon rend compte de la mise en œuvre, ou de l'essai d'un logiciel appelé "Role Playing Game" (RPG) pour enseigner l'anglais aux élèves de 1re et 2e années. Avec le logiciel, les auteurs ont demandé à cinq enfants de commenter et de donner des descriptions libres. Les auteurs ont recueilli l'expérience des élèves grâce à un questionnaire. Ils ont analysé le ratio de bonnes réponses données par les élèves après avoir utilisé le RPG, qui constituait un test diagnostique de leur compétence en anglais. Les auteurs ont souligné l'importance du logiciel en apportant un aspect ludique aux tests de compétence linguistique (Fukichi *et al*., 2016). Au Japon, la participation à des études comparatives internationales, notamment le Rapport mondial de suivi sur l'éducation de l'UNESCO, reflète un engagement continu envers l'évaluation et l'amélioration de son système éducatif. Cette démarche s'inscrit dans une volonté de s'aligner sur les

normes internationales et de garantir la qualité et la pertinence de l'éducation dispensée (UNESCO, 2020).

Les statistiques du rapport de 2018, présentées par le Programme des Nations unies pour le développement (PNUD), englobent des données compilées par l'Institut statistique de l'UNESCO, notamment un taux d'alphabétisation au Japon de 99,01 %, selon les travaux de (Mienga, 2018). Le taux d'alphabétisation élevé est crucial dans le contexte de l'éducation 5.0, car elle favorise la compétence des individus à s'engager dans des formes avancées d'apprentissage. La capacité de la population à lire, écrire et traiter l'information est essentielle pour la participation active à la société basée sur la connaissance que l'éducation 5.0 cherche à promouvoir. Le Japon se distingue par son Indice de Développement Humain (IDH) exceptionnellement élevé, atteignant 0,925 et le classant au 19e rang mondial en 2021. Cet indicateur reflète la qualité de vie, l'éducation et la prospérité économique dans le pays.

3.3. Implémentation de l'éducation 5.0 au Zimbabwe

3.3.1. Objectif

L'objectif de l'implémentation de l'Éducation 5.0 au Zimbabwe est de transformer les missions traditionnelles des universités d'État pour les aligner sur l'ambition nationale d'atteindre le statut de pays à revenu intermédiaire d'ici 2030. Sous la direction du ministère de l'Enseignement supérieur, de la Science et du Développement technologique, cette transition vise à orienter les universités vers des activités de développement national axées sur l'innovation, la résolution de problèmes et l'industrialisation. Les objectifs spécifiques comprennent l'adoption d'une mentalité de créateur d'emplois, la fourniture de solutions industrielles, le développement d'entreprises liées à l'université, et la mesure de l'impact à travers des indicateurs tels que les revenus générés et les classements mondiaux. L'Éducation 5.0 prépare le Zimbabwe à la Société 5.0 en intégrant l'enseignement, la recherche, l'innovation et l'industrialisation pour contribuer au développement national.

3.3.2. Démarche suivie

L'Éducation 5.0 a été mise en œuvre au Zimbabwe en juillet 2018. Cette nouvelle philosophie d'éducation, basée sur le patrimoine, a été mise en place par le ministère de l'Enseignement supérieur du Zimbabwe (Tshili, 2022).

Le ministère zimbabwéen de l'Enseignement supérieur a délégué à Zimbabwe Council for Higher Éducation (ZIMCHE) l'autorité nécessaire pour déployer le Zimbabwe National Qualifications Framework, marquant ainsi une étape importante dans le développement de l'infrastructure éducative. En effet, le Zimbabwe National Qualifications Framework (ZNQF) est une initiative nationale, lancée en juillet 2018 visant à intégrer l'éducation dans une structure unifiée avec des voies claires (MHTEISTD, 2019). Il facilite le transfert de crédits et la libre circulation des apprenants entre diverses institutions au Zimbabwe ou à l'étranger grâce à des voies de progression verticales et horizontales. Cette initiative vise à répondre aux besoins évolutifs du marché tout en éliminant les programmes académiques obsolètes, et elle inclut également l'établissement de nouvelles références modernes et innovantes, alignées sur les exigences concurrentielles du secteur de l'enseignement supérieur.

3.3.3. Moyens mis en œuvre

Le financement de l'infrastructure éducative au Zimbabwe a été réalisé par l'allocation de ressources financières, notamment des prêts accordés aux étudiants méritants grâce au programme du ministère de l'Enseignement supérieur, de la Science et du Développement technologique. Les institutions d'enseignement supérieur ont adopté une politique unifiée de promotion du personnel académique, éliminant ainsi le favoritisme, et les promotions étaient basés sur des critères prédéfinis pour garantir l'égalité. L'objectif était de créer une plateforme académique durable. Le gouvernement zimbabwéen dispose de ressources financières limitées, d'où le recours au secteur privé pour apporter un soutien financier au secteur de l'enseignement supérieur. Le partenariat public-privé peut jouer un rôle crucial dans le développement de l'infrastructure de base des pôles technologiques, des cités du savoir, afin de fournir des technologies de pointe dans le secteur de l'enseignement supérieur (Muzir *et al*., 2020). Il a également encouragé le partenariat public-privé pour le développement de l'infrastructure physique dans les domaines des sciences et de la technologie, facilitant ainsi l'excellence du secteur éducatif. Ces partenariats public-privé devaient prendre la forme d'accords Build Operate and Transfer (BOT) et Build Own Operate and Transfer (BOOT) dans le secteur de l'enseignement supérieur au Zimbabwe. Le gouvernement était là pour fournir un cadre juridique complet en établissant les règles et procédures pour surveiller l'ensemble du processus (Awang *et al.,* 2020).

Les besoins pédagogiques des enseignants et des étudiants tels que les tableaux interactifs, les projecteurs, les ordinateurs et l'accès à Internet nécessitent des financements (Sutcliffe *et al.,* 2016). Les fonds proviennent généralement des frais de scolarité payés par les étudiants. Pour cette raison, le gouvernement prévoit la mise en place d'une provision de prêts étudiants pour le paiement des frais de scolarité grâce au Higher and Tertiary Educational Loan Support Facility (Ministère de l'Enseignement supérieur, de la Science et du Développement technologique, 2018). Cela allégera la charge financière des étudiants, des parents ou des tuteurs pour le paiement des frais. C'est pourquoi, il est nécessaire d'impliquer à la fois des institutions financières locales et internationales dans la fourniture de cette facilité de financement éducationnel.

3.3.4. Suivi et pilotage

En 2021, le Zimbabwe affichait un Indice de Développement Humain (IDH) de 0,593, le positionnant à la 147ème place sur 191 pays évalués. L'IDH, utilisé par les Nations Unies pour mesurer les progrès d'un pays, prend en compte des facteurs tels que le revenu par habitant, l'espérance de vie et l'accès à l'éducation. Dans le contexte zimbabwéen, ces indicateurs soulignent les défis persistants en matière de développement. Malgré des progrès dans certains domaines, des inégalités subsistent, en particulier l'accès à l'éducation. Les statistiques du rapport de 2018, présentées par le Programme des Nations unies pour le développement (PNUD), englobent des données compilées par l'Institut statistique de l'UNESCO, notamment un taux d'alphabétisation au Zimbabwe de 91,9 %, selon les travaux de (Mienga, 2018). Le programme éducatif au Zimbabwe vise à promouvoir le développement

durable en autonomisant les enfants, les préparant à réaliser leur potentiel, à mener une vie saine, à accéder à une éducation de qualité et à devenir des acteurs sociaux. Ce programme couvre divers domaines tels que la santé maternelle, la nutrition, le VIH/sida, l'eau et l'assainissement, l'éducation de qualité, la protection de l'enfance et l'inclusion sociale. L'UNICEF s'engage à renforcer la collaboration avec d'autres entités des Nations Unies pour atteindre les objectifs du Plan-cadre de coopération pour le développement durable. Le suivi et la gestion du programme mettront l'accent sur la collecte de données fiables, l'évaluation des politiques, la mobilisation des communautés et l'utilisation de partenariats stratégiques avec des donateurs, le secteur privé et des institutions financières. L'innovation et la numérisation seront privilégiées pour renforcer la couverture des services et garantir la responsabilité envers les populations touchées. Le suivi sera adapté aux besoins locaux, en particulier dans les régions vulnérables aux chocs climatiques, assurant ainsi une mise en œuvre agile et efficiente du programme éducatif (Nations Unies, 2018). L'UNICEF assumera le rôle de leader dans l'action menée par l'Organisation des Nations Unies pour suivre la réalisation du Plan-cadre de coopération des Nations Unies pour le développement durable, en mettant en place des examens réguliers, un suivi continu, et en assurant la communication efficace de l'information sur le terrain dans un cadre conjoint.

4. Discussion

L'implémentation de l'éducation 5.0 au Japon et au Zimbabwe offre un éclairage intéressant sur la manière dont ces pays abordent la transformation de leurs systèmes éducatifs. En se penchant sur des critères essentiels tels que l'individualisation, le bien-être des étudiants et le développement des compétences du 21e siècle, on peut discerner des similitudes et des disparités notables. L'un des points saillants de l'approche japonaise réside dans son engagement envers l'individualisation de l'apprentissage. Les investissements massifs dans des technologies éducatives avancées, illustrés par des initiatives telles que le projet GIGA School, ont facilité une personnalisation accrue de l'éducation. Cela se traduit par une expérience d'apprentissage plus adaptée aux besoins de chaque élève, favorisant ainsi une meilleure rétention des connaissances et une progression plus significative. Le Japon a démontré une préoccupation remarquable pour le bien-être des étudiants. Cette approche équilibrée se reflète dans la volonté du pays de promouvoir la santé mentale des apprenants, créant ainsi un environnement éducatif propice à leur épanouissement personnel. Cependant, au Zimbabwe, bien que des efforts significatifs aient été déployés pour moderniser le système éducatif, des défis subsistent. L'individualisation de l'apprentissage est un objectif, mais sa mise en œuvre peut être entravée par des contraintes financières et des infrastructures limitées. Le Zimbabwe National Qualifications Framework (ZNQF) témoigne d'une volonté de flexibilité, mais son efficacité dépendra de son intégration réussie dans un contexte économique en évolution. En ce qui concerne les compétences du 21e siècle, le Japon a pris des mesures tangibles pour intégrer ces compétences essentielles dans ses programmes scolaires. Comparativement, le Zimbabwe cherche

également à moderniser son offre éducative en mettant l'accent sur l'innovation et l'industrialisation. La réalisation de ces objectifs pourrait être influencée par des facteurs économiques et structurels, soulignant la nécessité d'une approche flexible et adaptative. L'éducation 5.0 au Japon et au Zimbabwe partage des aspirations communes, notamment l'individualisation, le bien-être et le développement des compétences du 21e siècle. Cependant, la mise en œuvre effective de ces principes dépendra de la capacité de chaque pays à surmonter ses défis spécifiques, avec le Japon montrant actuellement des progrès plus tangibles dans plusieurs de ces domaines critiques.

5. Conclusion

La comparaison de l'implémentation de l'éducation 5.0 au Japon et au Zimbabwe met en évidence des approches divergentes mais enrichissantes. Alors que le Japon investit massivement dans l'individualisation de l'éducation grâce à des technologies avancées, le Zimbabwe se concentre sur l'enseignement supérieur pour atteindre ses objectifs nationaux. Les résultats au Japon montrent des avancées notables, notamment l'intégration réussie de dispositifs numériques et une focalisation sur les compétences du 21e siècle, tout en mettant l'accent sur le bien-être des étudiants. Au Zimbabwe, bien que l'individualisation ne soit pas aussi répandue, l'adoption du Zimbabwe National Qualifications Framework suggère une volonté de personnaliser les parcours éducatifs. Dans l'ensemble, la leçon clé réside dans la nécessité d'adapter les stratégies éducatives aux priorités nationales, mettant ainsi en avant l'apprenant au cœur du processus éducatif. Cette approche se révèle cruciale pour créer des systèmes éducatifs plus adaptatifs et efficaces à l'échelle mondiale.

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PROVIDING INCLUSIVE EDUCATION FOR DEAF STUDENTS IN THE POST-PANDEMIC UNIVERSITY CONTEXT*

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Abstract

Inclusive measures to ensure university education for Deaf students can be analyzed in the context of the bio-psycho-social model of disability in which we respect the particularities and value the real potential of the student. The approach that I propose for this paper is the bicultural- bilingual-bimodal way of regarding instruction, education and inclusion of Deaf Students. Taking into consideration just some theoretical aspects, I will focus more on pragmatical particularities that can interfere in the educational process of the Deaf Students from the point of view of the Sign Language Interpreter.

Key words: *Bio-psycho-social model of disability; Bicultural-bilingual-bimodal approach; Deaf students; Sign language interpreter.*

1. Introduction

Providing Inclusive Education for Deaf Students involves adaptations and strategies implemented to ensure that Deaf students have equal access in university settings. Inclusive education (Ainscow & César, 2006) is a philosophy that aims to create learning environments that accommodate the diverse needs of all students, including those with disabilities.

Manea's (2016) research highlighted the complexity of the interaction between health condition and contextual (environmental and personal) factors that generate disability and affect access to education. This research highlighted many barriers faced by people with disabilities in accessing education at all levels and underlined that there is a lack of procedures to facilitate access to education at upper secondary and tertiary levels. In their absence, students must make their needs known and negotiate the conditions of their participation in education, even though it is a fundamental right.

To clarify some contextual issues, I will briefly refer to legislation with implications in the area of hearing loss disability, which in Romania is still in the

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process of promoting an inclusive education system at all levels, according to the approach of the UN Convention on the Rights of Persons with Disabilities ratified in 2010. Regarding people with hearing loss, in addition to the application of law 448/2006 it is necessary in practice to see the application of law 27/2020 and here are some issues with direct implications on inclusion at educational and social level:

"The present law recognizes the Romanian Sign Language, hereinafter referred to as RSL, the mother tongue specific to deaf and/or hard of hearing people; RSL is a language in its own right, composed of hand signs combined with gestures, facial expressions, words spoken without sounds and with its own structure, lexicon and grammatical rules, used by deaf communities in Romania. Deaf and/or hard of hearing people have the right to use, preserve, develop and maintain their culture, to enhance and inherit their mother tongue; Deaf and/or hard of hearing people have the right to use their SLA in their dealings with central and local authorities and institutions, public or private, in order to exercise their citizenship rights; Central and local authorities and institutions, whether public or private, are obliged to provide deaf and/or hard of hearing persons with interpreters authorized in RSL, free of charge, in accordance with the legislation in force; Access to interpreters authorized in RSL is granted on request or ex officio; The Romanian State guarantees and ensures the right of deaf and/or hard of hearing children and students to learn, to be educated and to take school examinations in RSL"(L27/2020).

Beyond the legislative, educational and social milestones of the inclusive use of Romanian Sign Language, I agree with Bauman and Murray (2014) in making a plea against existing barriers to access to education, the most common of which seems to be in people's minds: the assumption that disability equates with inability to study and perform educationally. *Deaf Gain* promotes an understanding of hearing loss as a vital aspect of human diversity, highlighting the diverse, creative and cultural benefits, recognizing physical and cognitive differences as vital to human diversity. Resonating in the same idea, Yuknis, Santini, and Appanah (2017) mention that in the context of Gallaudet University they approach Deaf students as people who are not disabled and even if they do not hear they only need to learn through non-auditory means: as ASL-American Sign Language is used by default in all classes and public events; other practical details relate to the fact that on campus, spaces are designed for open, visual communication, ASL being the language of all because it supports direct communication, and thus relationships between professors and students becoming stronger.

2. The bio-psycho-social model of disability - as a framework of approaching students

The bio-psycho-social model of disability, according to Bath, Trask, McCrosky & Lawson (2014) is a holistic approach to understanding and addressing disability that goes beyond a purely medical or physical perspective. This model recognizes that disability is not solely determined by a person's medical condition but is influenced by a complex interplay of biological, psychological, and social factors. When applied in the university context, this model informs strategies for

creating inclusive environments and supporting students with disabilities. The bio-psycho-social model might be applied in a university setting if it will be a comprehensive understanding of the biological aspects of disabilities recognizing the specific medical conditions or impairments that students may have and how these conditions impact their functioning and providing access to medical services to ensure that students receive necessary support and accommodations related to their health needs.

Recognizing and addressing the psychological aspects of disability, including mental health universities may offer counseling services, mental health resources and support groups to help students cope with the emotional and psychological aspects of their disability. Focusing on the emotional well-being of students and fostering a positive and supportive campus culture, according to Philip, Suldo, Doll (2021) this can involve promoting awareness and reducing stigma surrounding mental health issues.

Facilitating collaboration across different university departments, including health services, counseling, academic support, and disability services ensures a holistic response to the diverse needs of students with disabilities. By applying the bio-psycho-social model of disability in the university context, institutions can create a more inclusive and supportive environment that addresses the complex and interconnected aspects of disability that recognizes the importance of considering biological, psychological, and social factors in understanding and accommodating the needs of students with disabilities.

3. The bicultural- bilingual-bimodal approach in the inclusion of Deaf students

The approach that I propose for this paper is the bicultural- bilingual-bimodal way of regarding instruction, education and inclusion of the Deaf Students and I will start by explaining the meaning of the terms "bicultural," "bilingual," and "bimodal" which are often used in the context of education and inclusion for Deaf students.

Here's what, according to Grosjean (2010) each term means: *bicultural* refers to embracing and recognizing both Deaf culture and the mainstream culture, recognizing the importance of integrating Deaf culture into the educational experience, ensuring that Deaf students can connect with and appreciate both their Deaf identity and the broader cultural context; *bilingual* in the case of Deaf students, typically involves the use of two languages: sign language and the written/spoken language of the surrounding hearing community taking into consideration that Sign language is a crucial aspect of communication for many Deaf individuals and incorporating it into the educational environment aiming to support proficiency in both sign language and the predominant spoken or written language to ensure effective communication and academic success; *bimodal* refers to the use of two different modes of communication combining signed and spoken/written language using sign language along with written or spoken language to ensure that information is accessible through multiple channels.

By adopting a bicultural-bilingual-bimodal approach for Deaf students, educators and institutions aim to create an inclusive and supportive learning environment that respects and values Deaf culture, provides effective communication tools, and recognizes the diverse ways in which Deaf individuals navigate the world. This approach acknowledges the importance of linguistic and cultural diversity within the Deaf community and seeks to tailor educational practices accordingly (Jones, 2021).

4. The role of a sign language interpreter in the university context of the Deaf students

The role of a sign language interpreter at a university, particularly in the post-pandemic era, remains crucial in facilitating effective communication for Deaf or hard-of-hearing students because of the hearing loss particularities and because the pandemic have brought about changes in the mode of instruction and communication. The sign language interpreter's role may evolve to meet the current needs of the university community and I will address some key aspects concerning mainly to accessibility, adaptations and collaborations.

The primary role of a sign language interpreter, according to Marschark, Pelz, Convertino, Sapere, Arndt & Seewagen (2005) is to ensure that Deaf or hard-of-hearing students have equal access to information in the academic setting and this includes interpreting lectures, discussions, and other university-related communications.

In the post-pandemic era, universities continue to utilize technology for virtual or hybrid learning, and the interpreters need to adapt to various online platforms, video conferencing tools and other technologies to provide seamless interpretation in virtual classrooms. They need a strong collaboration with the technology specialists and with the teachers to enhance accessibility features in virtual environments. This may involve ensuring that online platforms support captioning, screen-sharing, and other features that benefit Deaf students, so they need to be adaptable to different modes of service delivery, whether in-person or remote, depending on the university's policies and the preferences of Deaf students (Tufar & Anicescu, 2022).

The sign language interpreters are acting as advocates for accessibility (De Meulder & Hilde, 2021) by working with university administrators and faculty to promote awareness of the importance of providing equal access to education for Deaf students, maintaining cultural awareness of the Deaf community's norms and ensuring that interpretations are culturally appropriate. Collaboration with Disability Support Services to address the unique needs of Deaf students and ensuring that appropriate accommodations are in place they can facilitate social inclusion by promoting communication between Deaf and hearing peers, fostering a sense of community and advocating for accessible extracurricular activities.

5. Integrated measures to ensure inclusive university education for students with hearing disabilities

The complex measures to ensure inclusive university education for students with hearing disabilities mainly address three categories of students:

a) Hearing impaired students: with hearing loss ranging from mild (above 20-40 db.), moderate hearing loss (40-70 db.) to severe hearing loss (70-90 db.). Students with these types of hearing loss usually communicate through oral language and may use hearing aids, cochlear implants and other assistive devices, with the lip-reading aspects playing an important role. Often these students need support in adapting material by summarizing or highlighting main ideas. A practical element in the organization of exams may be to print out the subjects for the hearing-impaired student who is unable to write by dictation when the exam requirements are announced.

b) Deaf students who mostly have a profound hearing loss of over 90 db which implies little or no residual hearing. They use sign language for communication and if they have been educated according to the bilingual-bicultural approach (Tufar, 2016) they will use sign language as their mother tongue and then as a second language: the state language, showing peculiarities of bilingualism. In this case in addition to the adaptation of materials and teaching methods, the presence of the sign language interpreter is of crucial importance both at lectures and seminars and at certain public university events.

c) Deafblind students are a rarer category of students who simultaneously have dual sensory impairments with varying degrees of severity. Their challenges include access to information, communication, social activities, identity, autonomy and require specific adaptations according to their psycho-individual particularities in both materials and learning environment. It often requires the involvement of sign language interpreters or other specific communication systems and the use of assistive technologies.

Integrated measures to ensure inclusive and quality university education for students with hearing disabilities must be principles guided and starting from those stated by Barnes, McCrea and Hill (2020) I will mention the main suitable to the university context in which I am involved: applying the concept of "universal design for learning" so well outlined by Istrate (2020), which involves designing and carrying out a learning activity in such a way as to offer multiple ways of representing the learning content with reference mainly to the multiplicity of formats or channels used for the teaching activity and in which the information is accessible, but also to the degree of difficulty, complexity or logical sequence, giving the learner the opportunity to choose the mode of presentation or the route that suits him best to decode, appropriate and transfer the message to his own space of knowledge and action to offer multiple modes of action and expression.

Other important aspects are to allow various types of interaction of the learner with the learning content and alternative possibilities to demonstrate that he/she has learned, to offer multiple modes of participation, to support voluntary involvement and the student's connection to the learning activities. A design made with the aim

of motivating, sustaining interest and involving as many students as possible through interactivity can be relevant because of the scenarios and the content linked to real life, gamification and dynamism. According to Yoon & Kim (2011) if closed captioning is presented or applications are used, the hearing-impaired student with good reading skills will have access to all that is spoken. We need to pay attention that errors may occur if the transcription is not accurate or if the learner has not developed the necessary vocabulary.

6. Pragmatic aspects in working with the sign language interpreter

In interacting with sign language interpreters, in my own experience I have found out the following practical issues to be particularly important:

- Speak at a normal pace because the interpreter will ask you to slow down or repeat yourself if the pace is too fast.
- Allow the interpreter to stand in the field of vision where the student will see both you and the interpreter at the same time and make sure the light is appropriate in intensity and positioning.
- Give the interpreter the materials that will be discussed in class because this allows the interpreter to study the vocabulary in detail and be prepared for the interpretation.
- Avoid covering your mouth or standing with a light source behind you when speaking and avoid speaking while writing on the board or when your back is to the student.
- Communicate directly with the student with a hearing disability, don't ask the interpreter "Tell him...", look at the student, not the interpreter. The interpreter will convey whatever is heard and orally express whatever the student communicates.
- Interpreters are not allowed to express their own personal opinions or enter in the conversation.
- The interpreter will be a few words behind the speaker due to the dynamics of the interpreting process, it is recommended that you give the interpreter time to finish so that the student can ask questions or join the discussion.
- In a group discussion, make sure one person speaks at a time and indicate who is speaking. You may need to repeat questions or comments so that the student can keep up with the discussion.
- Allow extra time when referring to written material, as the student with a hearing disability needs to look at the material and then refocus attention to the classroom to keep up with the discussion.
- Inform students of any cancellations or changes to class/seminar schedules so that details can be arranged with their interpreters.

Many of the aspects mentioned above require adaptations according to the psycho-individual particularities of the students, whether they are hearing impaired or not, but are particularly useful to ensure that students with hearing disabilities participate fully and benefit maximally from having full access to information. I reiterate the point that in addition to the adaptations mentioned there is a huge need for

training Romanian Sign language interpreters, given the currently small numbers of interpreters and their important role in making information accessible to Deaf students.

7. Considerations for providing inclusive education for Deaf students in the post-pandemic university context form the sign language interpreter's perspective

Providing inclusive education for Deaf students in the post-pandemic university context refers to the efforts implemented to ensure that Deaf students have equal access to education in university settings, especially in the aftermath of the COVID-19 pandemic and some key considerations are discussed in the following part.

Technology integration, because the increased reliance on online learning during the pandemic highlighted by Akram, Yingxiu, Al-Adwan & Alkhalifah (2021) who underlined the importance of technology and the fact that the universities need to ensure that online platforms and learning materials are accessible for all the students. This could involve using captioning for videos, providing transcripts, utilizing technology that supports communication for Deaf individuals and the involvement of the sign language interpreter.

Accessible learning materials in multiple formats are needed to accommodate different learning styles and for Deaf students, this may involve providing written materials, sign language interpretation or captioned videos. Offering communication support services, such as sign language interpreters and adapted materials are crucial for Deaf students to fully engage in lectures, seminars, discussions and other university activities.

Training the University staff on how to work with the sign language interpreter and how to interact with Deaf students effectively may include awareness training about dialog dynamics, Deaf culture, communication preferences and the use of assistive technologies. Recognizing that each Deaf student may have unique needs, universities should be flexible in providing accommodations and this could involve tailoring support services based on individual requirements. Ensuring that the physical campus environment is accessible for Deaf students is essential and this includes considerations such as visual alarms, accessible classrooms and clear signposting (Bauman, 2014).

Taking into consideration the years of experience with Deaf students at "Babeș-Bolyai" University, we wanted to find out more practical considerations from the perspective of a working sign language interpreter, so I had a discussion with M.D. and in the following part you can read the interview:

Please introduce yourself and tell us how long you have been interpreting? In what contexts and since when have you been interpreting in a university context and in which department?

My name is M.D. and sign language is my mother tongue because I am CODA (Child of Deaf Adults) so I interpreted in the familiar environments since I was a child (at the doctor, market, school). In the public environment I started interpreting

about 4 years ago at different conferences, meetings, TedX presentations. In the university context I started in 2022 as an interpreter at the Faculty of Economic Sciences-profile Economic Informatics.

Is the process of making courses accessible an issue you have encountered in your interpreting practice? If yes, at what level was the accessibility carried out?

In my interpreting practice I have encountered accessibility needs and I have adapted the way of interpreting to the requirements of the student and the course specificities.

Which interpretation was more effective: simultaneous or consecutive. In which sense?

From my point of view, consecutive interpretation is more efficient, but in the university context it is not possible due to the large amount of information transmitted by the teacher to the student, so I do simultaneous interpretation.

To what extent do factors related to the organization of the physical environment: lighting, interpreter's posture, distance influence the interpretation?

Factors relating to the organization of the interpreter's physical environment are very important because the correct lighting provides clear eye contact, clothing should be dark (preferably black) to provide the necessary and correct contrast, hands and face should be highlighted, distance should be acceptable to be able to receive the correct message without interruptions in the visual field, sound should come from the correct angle so that the interpreter can receive it clearly.

How much does the lack of specific LSR signs in the academic field affect the quality of interpreting?

The lack of specific LSR signs greatly affects the quality of the interpreting act, because each faculty has its own specialization with specific terms and it is very difficult to transmit information in signs that does not exist, and we need to fingerspell. It is a continuous adaptation of the language in signs in a very fast way, because interpreting is done according to the teacher, not the teacher teaching according to the interpreter.

What aspects should an interpreter pay attention to successfully complete an interpretation?

First, the interpreter must understand the information received, then maintain expressiveness and keep continuous contact with the deaf person for feedback.

What do you see as the interpreter's contribution to the process of accessing information and learning from your perspective as an interpreter?

The interpreter is a bridge between 2 different worlds with the same common denominator, the interpreter facilitates the understanding of the information provided in addition to the syllabus and the way of working.

Finally, please share three words that define your role as an interpreter in the university context for deaf students.

Inclusion, acceptance and awareness!

8. Conclusions

By addressing considerations above, universities can foster an inclusive and supportive learning environment for Deaf students, ensuring they have equal opportunities for academic success in the post-pandemic context. Implementing inclusive policies and practices that consider the diverse needs of students are very important and influence providing adapted learning materials, reasonable accommodations ensuring that all events are accessible and fostering a culture of inclusion. We need to establish disability support services to address the educational and the social aspects of disability, such as providing sign language interpreters and accessible communication channels. In the post-pandemic university context, the role of a sign language interpreter remains vital in creating an inclusive and accessible learning environment for Deaf students and adapting to changes in technology and educational practices. The University aims for creating educational settings and social environments that are accessible to students with disabilities include physical accessibility, as well as the availability of alternative formats for learning materials and technology that supports diverse needs.

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EXPLORING LEARNING EXPERIENCES OF UNIVERSITY STUDENTS DURING THE PANDEMIC, A STARTING POINT FOR FUTURE QUALITATIVE IMPROVEMENTS - AN EMPIRICAL STUDY ABOUT POST-PANDEMIC LEARNING ANALYTICS*

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Abstract

The Pandemic period determined an abrupt transition of education systems, including tertiary education, from the traditional "face-to-face" learning environment to alternative ones in the online space, which had significant consequences on the teachers' didactic roles and especially on the quality of student learning, due to them being placed under the conditions of the absence of a transitional period with a formative effect. The article aims to identify the students' perceptions regarding the favorable elements of learning in the digital realm in comparison to the "face-to-face" environment, having as a purpose the improvement of the quality of university studies in the post-pandemic period. The empirical research used in the study involved undergraduate students from the Faculty of Sociology and Social Work (University of Bucharest), being based on the comparative approach of learning analytics elements in order to highlight the differentiated effects caused by online learning versus the face to face one.

Analyzing the changes felt by students in the post-pandemic period at the university education level regarding the efficiency of the organizational efforts when it comes to the learning process in the academic space, led to drawing interesting conclusions concerning: the need to expand the usage of blended learning forms, recommendations that can be useful for the teaching staff regarding the stimulation of the students' learning and the utility of involving a new type of specialist within the university, the one of a learning process analyst that sustains direct forms of mediate learning and learning support, offered especially for undergraduate students.

Key words: *Monitoring the learning process; Learning analytics; Blended learning; Post-pandemic mediated learning; Learning process analyst.*

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1. Contextual background

The pandemic period determined not only a sudden change in the organization and design of learning processes addressed to students in higher education (HE), but also a special interest from researchers who addressed in a significant number of scientific materials the analysis of multiple aspects intended to lead to the identification of positive or negative consequences on the quality of learning determined by online environments for carrying out educational activities.

Therefore, a survey of the academic and research media reveals a consistent number of studies on this topic that demonstrate their utility, including in the post-pandemic present, when research concerns goes forward, to comparative approaches with the aim of setting factors of improvement of the quality of learning that takes into account the combined capitalization, both of the positive aspects from the period of the majority use of online environments, as well as of the favorable and characteristic elements of "face-to-face" learning environments.

As a result of the analysis of the specialized literature, we retain some useful premises that we propose to use in this study:

- Since the transition from face-to-face learning to exclusively online learning was sudden, during the pandemic, students had to suddenly practice new ways of organizing learning without prior accommodation with hybrid formulas /blended type or "learning aids of worked examples and hints types in a blended curriculum, combining problem-based learning with e-tutorials" (Tempelaar, 2022, p. 131). We can also consider that the reverse transition from online to "face-to-face" learning environments in the post-pandemic period was achieved in a relatively similar way, without a period of parallel use of the two types of learning environments, which would have allowed a balanced takeover of effective practices, an analysis of the positive aspects related to each one of them and a continuation of the combined use of some learning modes.
- Given the major challenges caused by the need to provide university education exclusively in online environments during the pandemic period, a consistent number of studies provided by specialists have tried to clarify learning factors stimulated by online environments, as well as disadvantages, in comparison with „face to face" learning environments, with the stated intention of supporting with recommendations the improvement of student learning outcomes. Therefore, significant data sources can be identified for the construction of a learning analytics for the pandemic period that can be used, through analogical and comparative approaches, as a starting point for a learning analytics applicable to the post-pandemic period.
- In comparison with the "face-to-face" learning, academic learning in online environments requires much more consistent self-organization skills and student dispositions to learn (Learning dispositions represent individual differences that affect all learning processes and include affective, behavioral and cognitive facets (Rienties, Cross, & Zdrahal, 2017, in (6), p. 132). As a result, in technology-based learning environments "self-regulated learning is facilitated by the availability of instructional scaffolding" (Tempelaar, 2022, p. 132).

- Another element investigated, related to the specifics of student learning during the pandemic period, considered the best practices of teachers on how to ensure monitoring and provide adequate support to students in the context of online education. The analyzed studies most often lead to the conclusion that: "From the earliest studies appearing about the pandemic, one of the challenges teachers report is that it is hard for them to monitor their students, harder than it was in the physical context" (Van der Spoel *et al.*, 2020 in (7), 2023, p. 1).
- However, although social networking sites have been found to serve as effective mediators in collaborative learning, enhancing students' engagement, creative thinking and interpersonal skills (Binesh *et al.*, 2018), other studies suggest that the exclusive use of online media of learning during the pandemic period led to the impact of students' well-being, anxiety and inefficiency of the results obtained within the learning processes.

It should also be mentioned that, for the theoretical background of this study, we oriented the preliminary information to studies and articles that considered, for the pandemic period, the analysis of students' perceptions regarding learning factors that were favored or not by the online organization of learning, but also direct contributions of teaching staff regarding student learning monitoring practices, providing learning support, including through mediated learning.

2. The present study

The theoretical construction of this study started by identifying and selecting some factors that significantly influenced student learning, as well as some factors for monitoring/stimulating academic learning by teachers during the pandemic period, identified through desk research, based on the frequency of occurrence in academic analyzes in the field published in the period 2020 – 2022.

The questions we tried to answer to in this study are related to the following aspects: what are the students' perceptions about expressing a preference in order to learn more effectively in online or "face-to-face" environments and did the students feel supported by teachers for more efficient learning, in online or "face to face" environments. The expected answers tracked student expressions of opinion, distinctly, for the context of exclusively online learning environments (pandemic period) versus the current context, in which "face-to-face" learning environments have become predominant again from the perspective of everyday use in universities.

Starting from the comparative analysis of the intensity of the students' answer choices for the factors/elements of learning analytics in the pandemic/post-pandemic periods, the study aims to also clarify to what extent the combined forms of organizing academic learning in the post-pandemic period can constitute fruitful solutions that bring added value to the quality of learning processes during the pandemic period, through interdependencies with the positive aspects derived from the "face to face" development of university education today.

In this context, we aimed to identify the students' opinions regarding the opportunity of a new type of specialist, the "learning process analyst" who could

directly support forms of mediated learning and support in learning, granted especially for undergraduate students.

3. Research Methodology

Considering that most studies approached relatively distinctly, either the analysis of the students' or the teachers' perceptions, about factors influencing learning in a pandemic context, in the proposed study we tried to capture, in a comparative manner (the pandemic period/ post-pandemic), conclusions of a learning analysis based on students' perceptions, both about the quality of personal learning and about the involvement of teaching staff in measures to monitor academic learning.

To obtain some relevant conclusions in relation to the proposed objectives, we used empirical research to investigate the opinions of the students. This was achieved by means of a questionnaire constructed especially in order to obtain answers starting from the initially established premises.

The questionnaire included 10 questions, which, beyond the intended introductory aspects (questions 1-4), have a content that requires: answers from multiple predefined options (questions 6 and 9); answers based on the construction of hierarchies of personal choices in an implicit comparative manner (questions 5 and 7); open answers, formulating reasoned opinions (question 8) or personal recommendations on the given topic (question 10). Although the number of questions was relatively limited, the predominantly qualitative character of the answers requested determined an average time to complete the answers of 30 minutes.

The first 4 questions of the questionnaire (especially questions 2 - 4) asked for answers with introductory value in relation to: the existence of an experience related to the use of online learning before the pandemic period (being asked for a dichotomous answer), the mention, with approximation, of the duration (in years) of education in online environments during the pandemic period and with the percentage estimate of the weight of learning experiences carried out online during university studies, from the total time allocated to teaching activities.

Two of the questions (questions 6 and 9) contained multiple and single-choice answers, with the possibility of completing with additional answers provided by students (question 9). These inquiries sought, in the case of question 6, the identification of some elements that affected the quality of student learning during the pandemic period that were solutionized in the post-pandemic period, no longer being an impediment to learning. In the case of question 9, the respondents had to choose (through multiple-choice answer) from several options, recommendation proposals for continuing to support learning in online environments, based on the lessons learned during the pandemic period.

Questions 5 and 7 sought answers ranked individually by respondents, in a distinct manner (for online/face-to-face environments), regarding preferred reference elements for learning approaches in academic environments (question 5), respectively the expression of opinions regarding factors for monitoring student

learning used by teachers, especially in online environments, respectively in "face-to-face" education environments (question 7).

The questionnaire also included 3 open-ended questions that aimed to express opinions/recommendations on: the appropriation of the need to provide *learning support for students* through a learning process analyst, as a specialist in the university that helps train effective learning skills in students or possibilities for teachers to improve students' learning experiences in the post-pandemic period, based on lessons learned during the pandemic period, respectively adding other useful information that respondents would like to add in relation to the survey.

By means of the 10 questions, the questionnaire proposed to the students sought to probe opinions regarding the specificity and consequences felt by them in relation to the past learning pandemic, but also points of view regarding the way in which university learning today is influenced by the recent past, from the perspective of possibilities for future improvement of the quality of learning.

The data collection consisted in the application of the questionnaire built for students in October 2023, under conditions of ensuring the anonymity of the identity of the participants. Students from the 2nd year of undergraduate studies at the Faculty of Sociology and Social Work, majoring in Social Work, from the University of Bucharest, were involved in this data collection effort. 25.78% of the total number of students enrolled in the 2nd year of studies in the Social Assistance specialization participated with answers, as many explained that they were overloaded with activities and individual projects.

4. Results

The answers obtained from the students were consistent and of high interpretation value, the first premise in this sense being provided by the fact that 51% of them already had experience related to the use of online learning before the pandemic period. Therefore, the duration of the studies conducted in the online environment during the pandemic period becomes relevant for the study so that, based on sufficient experience, the respondents can operate in a credible and realistic manner with the analysis of some aspects of learning, in a comparative manner, when it comes to online versus "face to face" education.

At the same time, we can assume that 48.97% of the respondents went through a tougher period from the perspective of adapting to exclusively online learning environments, as there is the possibility that the comparative answers provided are relatively balanced from the perspective of the positive contributions brought by the 2 learning environments online/face-to-face quality of student learning for the post-pandemic period, given a significant amount of time already spent in online education environments even before the pandemic.

To the percentage mentioned, that represents the pre pandemic period of familiarization with the online learning environment, there is to be added an approx. 2 year period of online learning in the pandemic for the students questioned, an information that was derived from the 81, 63% of answers to the second question.

In minority proportions, 10.2% of the respondents went through 3 years of online education experience during the pandemic, 8.16% having such an experience of only one year.

Regarding the amount of learning experiences carried out online during university studies, from the total time allocated to teaching activities, the students' answers were extremely granular as a percentage expression, which determined the need for their grouping. This resulted in a predominance for the 10-50% range expressed by an average percentage of 68.29%, while for the 51-100% segment the preferences were oriented towards a percentage of 31.7%. From these percentage expressions, we can appreciate that the majority returned to "face-to-face" activities in the post-pandemic period, in the case of the respondents.

Continuing the expression of weights associated with online/"face-to-face" learning experiences, through question 5 we aimed to express students' preferences regarding relevant, predefined elements associated with learning approaches organized in online or "face-to-face" academic environments. With the title of general appreciation regarding the answers received, there is a noticeable degree of intensity in the expressed opinions on the 1 to maximum 6/7 scale, which can point to their strongly individualized character, but also to a reduced focus level of these group-level opinions (although the respondents came from a homogeneous group of students from the same study specialization).

A similar level of favorable appreciation, both for the online and the "face-to-face" environments, was obtained in the case of the reference elements regarding: the transmission of systematic contents related to the course hours, the expression of points of view, of personal opinions in the relationship with those transmitted and the organization and development of evaluation situations (within the seminars/final evaluation). Although a similar level of favorable appreciation was also associated with the element of analysis, *organizing and conducting assessment situations (within seminars/final assessment*), a significant number of choices for the least preferred option is also observed, both for online environments, as well as for "face to face" environments. A possible interpretation of these situations may indicate that some of the students clearly/exclusively prefer the association of evaluative approaches with one or another of the compared educational environments.

A clearer differentiation of the expression of the answers from the perspective of the intensity of preferences is visible for the "face to face" environments in the case of the following reference elements used in the questionnaire: the transmission of systematic contents related to the course hours; explanations for understanding contents, concepts, relationships, etc.; solving problems in collaborative group work. However, even in the case of these reference elements, there are respondents who marked their preferences for online environments.

In the case of the analysis element *solving problems in collaborative group work*, a significant number of choices for the least preferred option for online environments compared to "face-to-face" environments is noted.

Following the expression of students' preferences in relation to elements of online/"face to face" learning analysis, question 6 of the questionnaire has a role of verifying the answers expressed for question 5.

Through question 6, the students were questioned about several elements that affected the quality of their learning experience during the pandemic period, identified in specialized studies in the preliminary stage of theoretical analysis carried out for this material. The directly pursued objective was to indicate, from several possible options, those elements that the respondents consider to have found solutions to in the post-pandemic period, and that no longer represent an impediment to learning.

The possibility of multiple choices determined the gathering of less differentiated intensity weights between the possible answer variants, but the more consistently operated choices determined a greater credibility in relation to the respondents' opinions. Therefore, 42.85% of the surveyed students considered that the limited discussions and debates with professors and/or colleagues during the pandemic period constituted the most targeted aspect for resolution in the post-pandemic period, compared to the previous period. The answers that followed, with lower percentage values, close in value, were related to: decreased motivation/involvement in solving learning tasks (26.53%), to the low level of teachers' appreciation for works done/presented by students (22.44 %), as well as the assessment of the interactions with educational purposes were addressed, according to the opinion of 18,36% of the respondents.

One can observe that although the interactions with learning goals were rated as relatively functional even in online-only learning environments during the pandemic period, actual debates and discussions with teachers and/or peers were less likely to be effective until the return to face-to-face learning environments.

The response option regarding the students' good state of mind during learning sessions obtained the lowest value of respondents' choices, 12.24%, probably due to the high proportion of students who already had learning experiences in online environments and for whom the shock of learning exclusively in online environments was felt less. The importance of the pre-existence of learning "dispositions", meaning the prior state of preparation, for learning carried out in online environments is validated, which in the present case prevented the possible shocks of adapting to learning carried out in new contexts, less experienced by students.

The interpretation of the answers led to the identification of a coherence in the expression of the answers for questions 5 and 6, at least in relation to the preferences expressed by the students for the performance in "face-to-face" learning environments of: solving problems in collaborative group works (the question 5) - discussions and debates with teachers and/or colleagues, respectively (question 6), the organization and development of assessment situations (within seminars/final assessment) (question 5) - the level of teachers' appreciation of the work done/motivational aspects of learning (question 6).

Question 7 requested the expression of opinions regarding monitoring factors for student learning used by teachers in online environments, respectively in "face-to-face" education environments, by creating individualized hierarchies of choices and answers based on the intensity of preferences.

From a quantitative perspective, the responses provided, including by multiple preference placement, were more in favor of face-to-face learning environments compared to online environments, which points to a preliminary conclusion of making monitoring of student learning more visible and constant in face-to-face learning environments.

The most favorable responses hierarchically associated with teachers' monitoring of learning in face-to-face environments considered factors such as: explains his goals and expectations regarding assigned learning tasks to students; gives students opportunities for dialogue/expression of personal opinions; provides with comments/recommendations for the draft form of the students' work (upon their request).

On the other hand, responses with predominant values in the middle band of the intensity of associations, that approached the monitoring of learning by teachers in "face-to-face" learning environments referred to the choice of factors such as: gives examples of students' works which optimally meet its requirements (good student practices); encourages and values students' learning activities; provide immediate feedback to students/debriefing discussions after providing feedback for presenting individual or collaborative student work; is concerned with the final review of students' work before the exam; communicates the assessment criteria for students' learning activities; provides support for the formation of self-assessment learning skills in students.

For two of the factors of monitoring student learning by teachers in "face-to-face" environments, the lower positions obtained in the hierarchies made by the respondents were occupied by answers such as: shows current concerns for improving student learning (e.g. answers clarifying questions; provides explanations/ additional examples at the request of students; assigns additional learning tasks for students interested in topics studied / who are behind in coursework, etc.), respectively uses assessment practices that support the improvement of student learning.

In relation to the preferences expressed in the student hierarchies for learning monitoring factors in online environments, the values obtained were similar to those associated with "face-to-face" environments, but less numerous and with somewhat more frequent choices that tend to be negative (values 9 – 11), for the factors: use assessment practices that support the improvement of student learning, demonstrate current concerns for the improvement of student learning, provide support for the formation of self-assessment skills of student learning; is concerned with the final review of students' work before the exam; gives examples of student work that optimally meets its requirements (good student practice; provides immediate feedback to students/clarifying discussions after providing feedback for presenting individual or collaborative student work).

The interpretation of the data obtained for question 7 allows the drawing of some interesting conclusions regarding the prospective of some aspects related to the monitoring of student learning by teachers. Thus, for learning carried out in online environments, teachers have fewer opportunities to monitor learning, compared to "face-to-face" environments. Furthermore, we did not identify factors that indicated a particular increase in relation to monitoring learning in online environments. Therefore, for learning in online environments, other forms of monitoring are needed to be put in place to support teachers, forms that should involve additional support staff, be based on predefined monitoring elements that can be followed more easily etc.

On the other hand, although in the situation of "face-to-face" environments, the monitoring of learning by teachers seems to be carried out sufficiently by many reference factors proposed in the questionnaire, consistent improvements are required regarding the completeness of monitoring, the use of feedback mechanisms and the further improvement of student learning.

In order to be able to identify the students' proposals in relation to recommendations regarding the continuation of supporting learning in online environments, based on the lessons learned during the pandemic period, question 9 concerned the choice (including multiple-choice) of some answer options, but also the expression of personal opinions. Respondents expressed their belief in a significant proportion, 61.22%, that to continue the use of online learning in academic environments, the unified use of digital tools in the university is necessary based on a clear strategy regarding ICT communication tools, including collaborative ones. With relevant percentage weights and close in value, the students also appreciated the availability of streaming equipment for recording courses and seminars (42.85%), respectively the generalization of combined learning to improve students' learning experiences (36.73%).

Considering the general tendency of the answer choices of the student respondents, based on an individualized spread towards the answer options associated with online/"face to face" environments, we can consider that blended learning is especially preferred by students who are professionally employed during their university studies or for whom it would be less expensive to study at home outside the city where the university is located. In terms of ensuring easy access to university studies, hybrid organized learning could be a reasonable solution, in combination with the unified use of digital tools in the university based on a clear strategy regarding ICT communication tools, including collaborative ones.

The questionnaire addressed to the students also included 3 questions with open answers, from which we will exclude at the level of interpretations the last question (question 10) regarding the addition of other useful information that the respondents would like to add in relation to the topic of the questionnaire as it did not generate any answers from student respondents.

Question 8, which considered the expression of views on the appropriateness of the need to provide learning support for students, through a learning process analyst to exist as a specialist in the university to help build effective learning skills

in students, generated varied, particularly interesting answers, with a significant value from a practical and predictive point of view in terms of the delimitation of options for optimizing student learning.

Although 16.32% of the respondents appreciated that such a specialist would not be necessary in the university, most respondents (55.1%) recognized the need for a dedicated specialist in the university to analyze the learning processes and provide support to students based on several types of individually formulated arguments. Several answers revolved around arguments like: *He/She could have helped me with putting my learning style into practice" or that such a specialist "could help you learn faster and more effectively.*

Other respondents felt that such a specialist could be useful because: *Most students show a lack of concentration, attention, and the learning process is carried out differently; Would help students learn; Students, especially first year students, do not know how to manage their courses and would need help; Could support students in the learning process through personalized methods. Along with the student, he can find an effective learning method.*

Another response formulated established a relationship between online/"face-to-face" learning environments in a very suggestive way: *The transition from a face-to-face format to an online one was hard for many of us. Students underwent a major change in their attitude towards teachers and the subject they learn, not taking it as seriously in the online environment. In my case, such a specialist would be useful for support in a competency assessment and my preparation for it, including effective ways to retain information in the long term.*

Finally, other respondents believe that a learning process analyst: *Would help students manage their time* or could provide: *The more elaborate explanation of the details within a study program* or could provide *time-effective answers for the student's doubts or gaps,* so that *we can benefit from a small guide to help us evolve.*

The questionnaire included an open-ended question that sought to make recommendations for teachers to ensure improved student learning experiences in the post-pandemic period, based on lessons learned during the pandemic period.

The recommendations made by the students were quite numerous and diverse, although the question did not direct the possible answers to predefined thematic directions.

A preliminary analysis of the types of answers provided allows them to be grouped into 3 categories relevant to the objectives of the study, with reference to suggestions for: improving course materials in the post-pandemic period, combining learning in online/"face-to-face" environments, respectively of streamlining teaching processes, teaching roles, especially by considering in a more accentuated way the learning needs of students.

In relation to the improvement of course materials, the responding students recommend to university teachers: *To review/update the courses based on the lessons learned during the pandemic* because *all teachers should use the online environment and be used to taking online courses.*

Other recommendations refer to the necessary measures to digitalize courses and to change their structure and operationalization in relation to students: *The courses should be digitalized and the information should be clearer and more concise; The courses should be more interactive, more schematized, more essential, should be built on the basis of some interactions to maintain the students' attention.*

The students' recommendations regarding teachers' promotion of blended learning in university education were made from multiple perspectives. On the one hand, we identified the correlation of the suggestions made by the respondents with intentions to make academic learning more efficient/facilitating: *The combination of physical and online facilitates learning especially in the university area; To effectively combine online and face-to-face methods so that we can download courses from online platforms and upload course-specific assignments; Using technology, either as a means of assessment or as forms of exposure of some helpful materials; using technology as a method of teaching but also of communication with students to make life easier for both parties* but also, with the possibility of ensuring easier access to university education for students from other cities of the country:

I would recommend teachers to allow for us to record courses in order to make it easier for students from other cities to participate.

I would also suggest that they continue to use platforms such as Google Classroom to make the presentations used or materials intended for student documentation available outside of class hours.

Beyond the usefulness of the combined achievement of academic learning in online/"face to face" environments in support of facilitating access to studies and more effective learning, it is also worth remembering the recommendation regarding the need for specific training of teaching staff in the field of ICT-based learning: *Some teachers need to be trained in ICT; there are more applications/sites than the usual ones that are interactive, enjoyable.*

For the learning processes offered to students by university teachers to become more effective in the post-pandemic period, the students formulated some pertinent suggestions starting from: *Capturing students' attention during the course; information to be simplified and explained whenever needed.*

Regarding how the courses are conducted, they could: *To rely more on practical activities than on some documents that can be accessed on websites; To use presentations, to explain information through examples, to make the connection between theory and practice; To insist more on active learning and less on mechanical learning; to use new approaches.*

The learning resources proposed by teachers could also be improved, according to the respondents: *The materials they choose to share with students should be livelier. Don't get lost in the actual subject, because it becomes monotonous, and in this way, the students' attention is lost.*

And from the perspective of the relationship between teaching staff and students, improvements would be desirable, some of the respondents indicating the need to:

More involvement in the teacher-student relationship, or teaching behaviors based on understanding, better communication and empathy towards students: *Teachers should be more understanding, giving us the assurance that we can do it even if we had a slower start / patient, communicative because we need to support each other; From time to time it is good to ask students for feedback, assertive communication can be effective. Assessment through communication can reveal to us what each one needs, that way each one is not alone or misunderstood etc.*

5. Conclusions

The students' answers validated once again what the specialist literature calls "technostress"("Problem of adaptation that individual experiences, when he or she is unable to cope with new technology", Tarafdar *et al*, 2007 in (1), p. 29), including the relationship to learning during the pandemic period, because it "is affecting all members of the academic community: students, professors, and staff (Charles *et al.*, 2020; Abilleira *et al.*, 2020 in (1), p. 29), showing that universities need to provide better solutions to monitor and provide support for this specific matter" (in (1), p. 29).

On the other hand, for the post-pandemic period the combined learning processes in online/"face-to-face" environments seems to be a balanced solution for reducing inequities related to easy access to academic learning for students with reduced economic opportunities.

From the perspective of ensuring a combined approach to learning in academic environments in the post-pandemic period, the recommendations made by a group of authors from the University of Innsbruck regarding ensuring the mandatory training of teaching staff in higher education should also be remembered: "Regular and compulsory training for teachers in these new opportunities is, in our opinion, the only option to keep university teaching up-to-date with the young generations' expectations of education in the post-pandemic, post-digital age. For teachers to be able to reserve sufficient time to acquire and update their digital skills, it will be necessary for universities to offer corresponding teaching reductions." (Bork-Hüffer, *et al.*, 2021, p. 22).

In conclusion, the usefulness of the lessons learned from the pandemic period for improving the design of university education processes in the post-pandemic period was well demonstrated by the results of the conducted study, the analysis of the opinions expressed by students being significantly for substantiating some decisions on this topic.

Some of these benchmarks, derived from this study, consider:

- The importance of establishing a balanced weight of the organization of learning in a hybrid/blended format, so that both the strengths of online learning and those of "face-to-face" environments are exploited, possibly by establishing an accepted frequency for courses to be conducted in the online format or for students to have the option to participate in temporary/permanent online courses, due to reasons accepted at university level (e.g. medical reasons, professional employment, vulnerable socio-economic situation, etc.);

- Regulating the unified use of digital tools in the university based on a clear strategy regarding ICT communication tools, including collaborative ones; such an approach should ensure clear quantification of the number of users, students and teaching staff, for the online environment, but should also include the functionality of monitoring learning processes based on learning analytics, established by adapting them to the particularities of each specialization university;
- The development of learning analytics, its customization and improvement could constitute one of the basic roles of the learning process analyst, a new type of specialist that could exist in the university with the aim of supporting the quality of university education; the roles of the learning process analyst would be multiple and associated with the needs of didactic staff (related to the intention to build and provide learning situations as appropriate and adapted to the needs of students, monitoring and improving the effects of learning, etc.), but especially with students' needs (to reduce difficulties in learning processes, to support the strengthening of transversal competence to learn to study in relation to the specifics of undergraduate university studies, etc.).
- The need to associate a type of university education environment, be it online or "face-to-face", with learning analytics, meaning parameters for process analysis through which the quality of student learning can be monitored, as well as the mediation of some ways to improve the situations indicated preventively by the daily monitoring measures. For example, in the case of the students participating in the questionnaire, coming from the Social Work specialization, i.e. a specialization in the socio-human studies category, the recommendations for improving the learning experiences of the students in the post-pandemic period, based on the lessons learned during the pandemic period, had in particular aspects related to reducing the excess of theoretical approaches from courses in favor of interactive ways, based on practical applications, use of learning resources in digital format. It is quite likely that, in the case of surveying students from technical specializations, the students' recommendations would reflect a different specificity and could constitute the beginning of other useful research and practical approaches to increase the quality of learning in academic environments.

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COMPARATIVE ANALYSIS OF THE LIFE QUALITY OF STUDENTS FROM ROMANIA AND THE EUROPEAN UNION*

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Abstract

The concept of life quality is a construct concept, which is most often defined by the component elements and the interdependent relationships that are established between them. Crossing the pandemic period has led to the multiplication of studies on the quality of life, but most of the time these studies are carried out on adult or elderly subjects. We are trying to signal the importance of studying the quality of life of teenagers and young people, considering that the formation of healthy life skills can be formed more easily at these ages, which can lead to the formation of a healthy physical, mental, emotional and social.

The study consists of the analysis of European and national level documents developed in recent years, in which the life quality of young people, respectively of students/master's students, is probed. We also try to identify the research on the life quality of young people carried out in recent years in the area of research of recent years.

Key words: *Quality of life; Young student; Comparative analysis; Constative study.*

1. Introduction

Quality of life is a complex and multidimensional concept that encompasses a variety of aspects that contribute to the overall well-being of the individual or community. Quality of life represents "the set of elements that refer to the physical, economic, social, cultural, political, health, etc. situation in which people live, the content and the nature of the activities they carry out, the characteristics of social relationships and processes in which they participate, the goods and services they have access to, the consumption patterns adopted, the mode and lifestyle, the evaluation of the circumstances and the results of the activities that correspond to the

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expectations of the population, as well as the subjective states of satisfaction/dissatisfaction, happiness, frustration, etc" (Mărginean, Bălașa, 2002).

This concept has become increasingly important in the social and health sciences, being studied and applied in various contexts. Life quality cannot be reduced to a single element; it includes social, economic, health, environment, interpersonal relationships and personal satisfaction. It is often measured through subjective and objective indicators, such as standard of living, access to health services, education, and a sense of personal happiness and fulfillment. The field of applicability of the concept of quality of life is vast and includes different fields. The quality of life is closely related to the state of health of the individual. Indicators such as physical and mental status, access to medical services and their quality are essential in the assessment of life quality in the field of health. Access to quality education and opportunities for personal development contribute significantly to the quality of life. Education level can influence career, income and personal satisfaction. The state of the environment, pollution and access to sustainable natural resources have a direct impact on the quality of life. Protecting the environment is considered a crucial component in ensuring a healthy and balanced life. There are many tools and methods for measuring quality of life, from subjective questionnaires to objective indicators such as infant mortality rates or living standards. The combination of these methods provides a more complete and relevant picture.

The literature has long suggested that the quality of school life (QSL) plays a vital role in improving students' motivation and efforts, their emotional, behavioural and cognitive engagement, performance and achievement. However, research on the quality of school life with respect to the education systems in the European Union is still fragmented.

2. The Life Quality of Young People in Europe

We propose to start by exploring the multifaceted dimensions of the quality of life among young people in Europe. As the future leaders and contributors to society, understanding and enhancing the well-being of this demographic is crucial for sustainable development. The study employs a comprehensive approach, considering various factors such as economic prosperity, social relationships, health, education, and subjective well-being. Data from diverse sources, including surveys, statistical reports, and academic studies, are analyzed to provide a nuanced perspective on the quality of life of young people in Europe.

The quality of life for young people is a key indicator of societal progress and development. This article aims to assess and analyze the current state of well-being among the youth population in Europe. Aspects such as economic opportunities, educational access, social inclusion, and mental health will be explored to gain a holistic understanding of the challenges and opportunities faced by young Europeans

One crucial aspect of the quality of life is economic prosperity. The article examines youth unemployment rates, income levels, and access to stable employment. Additionally, the impact of economic factors on the overall well-being

of young people is discussed, considering issues such as housing affordability, cost of living, and economic inequality.

Access to quality education is fundamental to the well-being and future prospects of young individuals. This section explores the educational systems in Europe, evaluating factors such as educational attainment, access to vocational training, and the relevance of curricula in preparing young people for the evolving job market.

Social connections and a sense of belonging are integral to the quality of life. The article delves into the social dimensions of young people's lives, examining factors such as social inclusion, community engagement, and the impact of social media on interpersonal relationships.

Physical and mental health play pivotal roles in determining the overall quality of life. This section investigates the state of healthcare accessibility, mental health support, and lifestyle factors affecting the well-being of young Europeans.

Beyond objective indicators, the subjective experiences and perceptions of young people are being considered. Surveys and psychological studies are analyzed to understand how young Europeans perceive their own quality of life and the factors influencing their subjective well-being.

The findings of this study have significant implications for policy development. Recommendations for targeted interventions and policy changes aimed at improving the quality of life for young people in Europe are discussed. Emphasizing the importance of a holistic approach that considers economic, social, and health-related factors is crucial for informed policy decisions.

By examining various dimensions, from economic prosperity to subjective well-being, the study offers insights into the challenges and opportunities faced by this demographic. It is hoped that the findings will inform policymakers, educators, and stakeholders in creating strategies that enhance the overall well-being of young Europeans, ensuring a more sustainable and prosperous future for the continent.

There are numerous studies and researches on the quality of student life in Europe. These studies are often carried out by government organizations, academic institutions, student organizations or international bodies. These researches target various aspects of students' lives, including social, economic, academic and health aspects.

EUROSTUDENT is a European organization that collects and analyzes data on the social and economic situation of students in higher education in Europe. Their research covers topics such as cost of living, living conditions, income and financial support, access to transport, leisure occupations and more.

EUROSTUDENT VII data covers 27 countries: participants are from Iceland in the north to Turkey in the south and from Portugal in the West to Georgia in the East. The indicators presented in EUROSTUDENT VII are based on survey responses collected from over 370,000 students.

EUROSTUDENT collects information on students' characteristics, including age, family status, sex, migration background, and impairments. This information helps to draw a picture of the diversity of student populations in Europe, which vary greatly on many of these characteristics.

Such data can also help raise awareness at the institutional level to enable HEIs to create inclusive learning environments that adequately address and support students (Brooks *et al*., 2020; Claeys-Kulik *et al*., 2019).

Another aspect studied is the socio-economic environment of students which, in particular, has a strong influence on the career and educational results of students (Avram & Cantó-Sánchez, 2017; Thompson, 2019), and effects generally on subsequent life experiences (Mazzonna, 2014). EUROSTUDENT VII discusses the educational and economic backgrounds of students, focusing in particular on equity issues and differences.

Several instruments ensure equitable access to higher education, all with the intention of opening access requirements to alternative pathways and allowing for higher education entrance through routes that deviate from traditional and more rigid requirements (Reay *et al*., 2001).

Regarding the transition to higher education, most students enter higher education within a period of two years after leaving the regular school system in all EUROSTUDENT countries. Generally, students whose parents are not financially affluent are more likely to enter higher education with a delay greater than two years after leaving school than students with higher educated or financially wealthy parents.

The topic of equitable access into and within higher education also raises the question of which (potential) student groups are targeted by the different measures. Some common themes regarding the diversity of socio-economic and cultural realities across the EHEA "are inevitable across countries: low socio-economic background (in the form of low income or the low educational background of parents), gender, immigrant status and disability are often taken as main aspects of disadvantage. Furthermore, mature students are specifically targeted in many countries, as students from underrepresented groups often enter higher education with a delay" (European Commission *et al*., 2020).

Another aspect studied by EUROSTUDENT is that related to the types and modes of study in the countries participating in this research, although more and more aligned over the years, they still leave room for national specificity and a diversity of cultures in the respective higher education sector. Analysis of students' satisfaction and drop-out intentions can be helpful in investigating which students face particular challenges and are potentially at risk of abandoning their studies. Some clear cross-country findings in this regard are that, in most EUROSTUDENT countries with binary higher education systems, students enrolled at non-universities are on average more satisfied with the support provided by them. Across countries, drop-out intentions vary most clearly along the lines of study fields, with students studying information and communication technologies in all countries most likely to be seriously considering dropping their study program completely. Closer analysis of these findings at the national level can help reveal potentially at-risk student groups grappling with the organisation of their studies, who might particularly benefit from additional support.

In terms of time limitation, the findings of the latest study clearly show that students are busy: for most students, the time spent each week studying and working

corresponds to more than a full-time job of 47 hours per week on average. Time pressure is not equal for all students. Weekly the workload in hours of those who combine studies with a relatively time-intensive job is (much) higher than unemployed students: 62 versus 38 hours per week.

Work and preparation for the entrance into the labour market play an increasingly important role for students. The majority of students in EUROSTUDENT countries work several hours a week in addition to their studies. In fact, for one in five students, this work occupies such a prominent place in their lives that they self-identify primarily as workers, rather than students. Students from a non-tertiary background work more often during their student time than those from a tertiary background, whereas students from a tertiary background are overrepresented in the group of students who work only during the lecture-free period. Employment is not always a choice; half of students work because they would not be able to afford to study otherwise. This is most often the case for students without a tertiary education background. It also turns out that their earnings largely determine students' budget, accounting on average for almost two thirds of the income of students working during the lecture period.

EUROSTUDENT countries follow different concepts when it comes to structure of national public support for students. While Austria, the Czech Republic, Georgia, Italy, and Romania relies entirely on grant funding for their students, all others countries use a combination of reimbursable and non-reimbursable assistance. In 30% of countries, recipients of national public student support receive more than half of their support in form of repayable funds. Students from the Netherlands, Norway, Sweden and Turkey receive particularly high rates of reimbursable support, amounting to more than two third of all national public support for students. Regarding public loans as a study funding, however, the problem may arise that students with low socio-economic environment are less willing to take them out than their peers with higher education and socio-economic background (Brown *et al*., 2011; Gayardon *et al.,* 2019; Palameta & Voyer, 2010).

Covering their own expenses is a fundamental objective of students' financial activities. A look at the structure of students' total monthly expenses shows that living costs continue to dominate. In all countries, this type of cost requires more than half of all expenses and, on average per country, living expenses amount to 87% of total expenses. By this measure, living costs appear to be the biggest financial barrier that students and their families must overcome.

In the EUROSTUDENT countries, student satisfaction with housing characteristics of cost, location, general condition and commuting time is generally quite high. Overall, in all countries, a clear majority of all students are satisfied with these aspects. It seems that the biggest student dissatisfaction can be found with the commute time. Satisfaction also differs by type of housing. In terms of commuting time, students who live with their parents are particularly unhappy. Dissatisfaction with accommodation costs is the most pronounced among students who live with other people. Dissatisfaction with the general condition a housing is quite high

among students living in student housing. This exemplifies that each form of housing has different strengths and weaknesses.

A final aspect studied by the EUROSTUDENT VII research is the one related to international mobility. With all the importance given to international mobility, in terms of graduate mobility rates and the extent of periods abroad in the form of duration and/or ECTS, students should not ultimately be forced to become mobile. Mobility experiences can increase social stratification and the selectivity of higher education if the benefits, including those for labor market participation, depend on (certain types of) experiences abroad (Marginson, 2016; Netz & Grüttner, 2020). Ensuring experiences and benefits are available to all student groups in in the same way, by providing financial support and information and by developing innovation forms of mobility that allow greater flexibility, such as virtual and mixed formats, is necessary to avoid inequalities in this sense.

European Students' Union (ESU) study organizations at the European level and conduct research to evaluate the living conditions of students. They address issues such as student rights, academic and social mobility, and access to education.

The European Students' Union (ESU), the European Federation of Psychology Students' Associations (EFPSA), the International Federation of Medical Students' Associations (IFMSA) and the Youth Health Organization (YHO) joined for the first time in 2020 to mark World Mental Health Day on October 10 with an online event "The blind spot of higher education: Student mental health" "Forgotten and undervalued, including students?"

The Organization for Economic Co-operation and Development (OECD) conducts a research on higher education and the life quality of students in its member states. Their studies can cover a wide range of topics, including access to higher education, student employability and student satisfaction.

Many European countries and individual universities conduct their own studies on the quality of student life to tailor policies and services to the specific needs of their student population.

These studies provide important information for formulating and adjusting educational and social policies to improve the student experience in higher education. The results of this research can also be useful for students, parents, educational institutions and policy makers.

3. The Life Quality of Young People in Romania

The documentation revealed to us that there are several studies and researches that dealt with the quality of life of students in Romania. These studies are often conducted by academic institutions, student organizations, government bodies or non-governmental organizations.

The EUROSTUDENT organization carried out studies that also included data about students in Romania, analyzing aspects such as living conditions, student budgets, mobility and access to educational services.

In addition, higher education institutions in Romania, including universities and student associations, conduct their own research on the quality of student life to better understand the specific needs of their academic community.

The quality of life for students in Romania can vary based on various factors such as the city or region, economic background, and individual circumstances. Here are some factors that contribute to the overall quality of life for students in Romania.

Romania is generally considered to have a lower cost of living compared to many Western European countries. However, costs can still vary between cities. For example, living in the capital city, Bucharest, might be more expensive than in smaller cities or rural areas.

The availability and cost of accommodation can significantly impact students' quality of life. Many students in Romania live in university dormitories or rent apartments, and the cost can vary depending on the location.

The quality of education and the reputation of universities can affect the overall experience for students. Romania has several well-established universities, but there can be variations in the quality of programs and facilities.

The social environment and cultural scene in Romania can contribute to a positive student experience. Larger cities often offer a more vibrant social life with cultural events, nightlife, and a diverse range of activities.

Job opportunities for students, both part-time and after graduation, are crucial for a good quality of life. Romania's job market and economic conditions can influence the availability of such opportunities.

Access to healthcare services is an essential aspect of quality of life. Romania has a public healthcare system, but students may also have the option to access private healthcare services.

Romania has a rich cultural heritage and offers various recreational activities. Students can explore historical sites, enjoy traditional cuisine, and engage in outdoor activities, contributing to a well-rounded student experience.

The ease of transportation within the country can impact students' mobility. Romania has a network of public transportation, and most of thr cities have well-developed public transit systems.

Access to reliable internet and modern technology is crucial for academic success and overall well-being. Urban areas in Romania generally have good internet infrastructure.

It's important to note that individual experiences may vary, and personal preferences play a significant role in how students perceive their quality of life. Additionally, changes in economic conditions, government policies, and other factors can influence the overall student experience over time.

4. Conclusions

Below are the aspects that can be influenced by the quality of life of students:

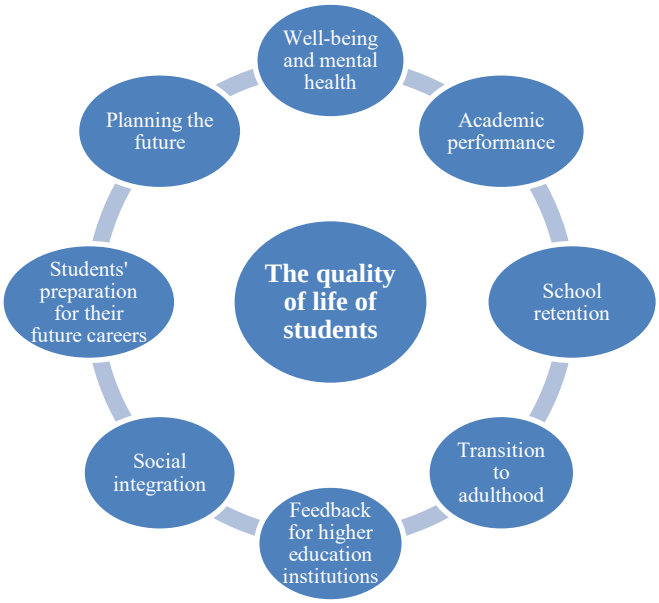

Figure 1. The aspects that can be influenced by the quality of life of students

The life quality of students has a direct impact on well-being and mental health. Positive experiences during the school years can contribute to better mental and emotional well-being, while challenges can lead to stress and anxiety. Student well-being can influence academic performance. A positive and supportive environment can contribute to focus and success in learning. A better quality of student life can contribute to a higher school retention rate. Students who feel engaged and fulfilled in their academic environment are more likely to stay in school and continue their education. The period of higher education often marks the transition from adolescence to adulthood. Studying student quality of life can provide insights into how this transition is managed and how students adjust to the demands of independent living. Research on student quality of life can provide useful feedback to higher education institutions to improve their services and better respond to student needs.

This information may include aspects of accommodation facilities, quality of academic programs, counseling services and social support. The quality of life of students is closely related to their social integration in the academic community and society in general. Students who feel part of a community and have strong social ties tend to have a more positive experience. Experiences during their studies can influence students' preparation for their future careers. A better quality of life for students can help develop the social, emotional and professional skills needed in the world of work. Studying students quality of life can provide information about their plans and expectations for the future. This information can be valuable for planning educational policies and for the professional and personal guidance of students.

In conclusion, understanding and improving the quality of students life is critical to ensure a positive academic experience and prepare students for success in their later personal and professional lives.

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CREATIVE TEACHING - REFLECTIONS AND APPROACHES*

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Abstract

In modern pedagogy, the concept of teaching has acquired a lot of new meanings and has had numerous interpretations, but also reinterpretations.

The redefinition of teaching is imposed by the transition process from "transmission pedagogy" to "active and constructive pedagogy", oriented in the direction of effective learning, immediately, but also in the medium and long term. Thus, the relationship between teaching and learning becomes very important, as actions subordinate to the training activity.

In postmodern (contemporary) pedagogy, the concept of teaching is defined as the action of formative communication of the pedagogical/didactic message, designed according to the objectives of the training activity, carried out at the level of the common repertoire between the teacher and the class of students, aimed at immediate learning and in the medium and long term, regulated and self-regulated by continuous evaluation of results.

Teaching is the dominant activity of the teacher and a causal variable on which the state of preparation of the students largely depends. Approaching the creative dimension in teaching is considered an optimal way for the development of the student's personality, in the context of contemporary educational models, which emphasize educational innovation.

Key words: *Teaching; Creative teaching; Formative teaching.*

1. Introduction

The information explosion produced simultaneously with the reconceptualization of educational paradigms generated the need to explore new ways of educational intervention and teaching-learning-evaluation. Students' creativity can be harnessed by exposing them to a variety of opportunities driven by technological and informational developments.

On the other hand, creativity is a condition of efficiency both in work and in education. For an adult to become creative, it is necessary to stimulate creativity and

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develop creative potential from an early age. School plays an essential role in training students to be able to use their full creative potential in future productive activities, being the main tool, that society uses to cultivate the creativity of future adults.

The contemporary educational models support the perspectives of innovation of the educational process, some essential dimensions highlighted being: the active involvement of students, emphasis on learning through interaction, centering the assessment on progress and skills training, the need to build transdisciplinary approaches, as well as the valorization of students' skills training in the extracurricular environment.

The recognition that the development of students' creativity is a prerequisite for the development of their skills and personality focused the analyzes on the identification of optimal strategies and approaches that can be integrated into the educational process.

The creative dimension of the didactic act extends these analyzes to the level of all educational variables, which can be designed for the global innovation of the process. Teaching, as a fundamental didactic process, integrated in the teaching-learning-evaluation relationship, is one of the main ways in which the teacher can foresee the behavioral changes of the students, exhaustively covering the dimensions of development: intellectual, motor, motivational, relational acquisitions, of communication etc.

2. Theoretical foundation of the theme

2.1. The evolution of the teaching concept

The evolution of the concept of teaching highlights multiple conceptual interferences, with an emphasis on defining the meaning of teaching in the circular teaching-learning-evaluation model.

The conceptual analyzes highlight the transition from the primary, extrapolated meaning, in which teaching is synonymous with instruction, through which the student is taught, and the teacher represents the central factor of the activity (Cristea, 2019).

Later, various definitions were assigned to the concept of teaching, highlighting the teaching behaviors, these representing the teaching actions of the teacher, through which this didactic process is assumed to be active, of educational intervention in order to obtain didactic results. We identify, in this sense, the specific teaching behaviors: producing the expected changes, specifying the learning objectives, organizing the learning content and the ways of presenting them, establishing the way of active engagement of students in learning and organizing the optimal conditions, achieving feed-back training and evaluation of the effectiveness of the educational intervention (Potolea, Neacșu, Iucu, Pânișoara, 2008). In parallel, didactic roles are assigned to the teacher: provider of information, model of behavior, creator of learning situations, counselor and guide, evaluator and therapist, organizer and leader (Jinga, Istrate, 2006).

The focus of teaching on the aspect of educational intervention is identified, in the sense of producing changes in the students' behavior. Teaching is a change

caused in the behavior of students, by engaging them in learning experiences (Iucu, 2008), a process of knowledge accumulation, which requires repetitions, practice, imitation (Cerghit, 2008), overall, of ways to present the subject, communicate knowledge, ensemble of strategies to present a lesson, etc. (Potolea, Neacșu, Iucu, Pânișoară, 2008).

Contemporary approaches are built around the teaching-learning interaction, because teaching involves producing results in students' learning behavior. It is related to the force of inducing learning and, on the other hand, to the effective production of learning (Brițchi, Sadovei, 2014), through activities of explanation, systematic, effective and deliberate introduction of a content, the quality effectiveness of teaching being that of leading to learning (Neacșu, 1990).

2.2. Creative teaching – conceptual meanings

Creativity represents the highest level of manifestation of human behavior, and the quantification of creative behavior is expressed by the degree of originality, novelty, value and social utility. Creativity is a social need caused especially by the challenges of contemporaneity, which constantly brings new benchmarks for training, development and education.

Creative manifestation requires adaptation, and in order to adapt to the permanent requirements exposed in the educational environment, the teaching staff must cultivate their creative skills, to ensure the development of a new, challenging, exciting training framework for all those involved.

Being defined as a general disposition of the personality towards the new, the creative process is expressed through actions of combining, imagining and continuous restructuring of known data, to ensure access to discovery, search, innovation. The development of students' creativity is explored through intellectual (imagination, memory, thinking) and personality factors (perseverance, patience, enthusiasm, spirit and discipline of group work, willingness to learn, discover, discovery, satisfaction, professional dedication, etc.).

The constructive roles of education in stimulating and developing creativity are (Rotari, 2010):

- the promotion in the educational environment of relationships based on collaboration, on the stimulation of students' efforts and their desire to make their own contributions to the introduction and study of the new, on the development of their attitude to be original, inventive and creative;
- the promotion of heuristic approaches, which lay the foundations for the formation of independent and creative thinking of students, to put into action their spontaneity and initiative, their entire intellectual, affective and motivational potential;
- the use of learning through discovery, problematization;
- capitalizing on research elements;
- posing new problems and questions, envisioning new possibilities for approaching old problems, all of these presuppose creative imagination and mark real processes in science;

- capitalizing on the creative and stimulating valences of the communicative-explanatory, interrogative-conversational methodologies, as well as those intended for independent activities.

Creativity in teaching brings to the forefront the ideas of educational paradigms, which support the construction of knowledge through a creative and active process. In constructivist approaches, students build their own knowledge through experimentation, reflection, discovery, etc., students' acquisitions being the result of their active, creative and responsible involvement in their own training, in which students interact with new learning experiences through which they modify their own reflections (Oprea, 2007).

Referring to indicators of creativity, the definition of creative teaching is complex and fraught with various approaches.

On the one hand, creative teaching is determined and influenced by creativity factors: fluidity and flexibility of thought, originality, elaboration, sensitivity and redefinition.

Creative thinking represents the relatively autonomous approach of the person who acts in and on his environment and which leads to an original, personalized product (Bocoș, 2013). Creative thinking, considered the main component of creativity, is characterized by the presence of the characteristics of divergent thinking: fluidity, flexibility, originality and productivity:

- fluidity in teaching is expressed through the wealth of associations and ideas to be taught;
- flexibility in teaching derives from the ability to quickly change the reasoning of teaching when the teaching-learning situation requires it;
- originality of teaching is defined by novelty, freshness, inventiveness;
- productivity in teaching is associated with the qualities of the product, i.e. of the results or acquisitions acquired by the students as a result of the act of teaching.

Creativity manifests itself in different forms, all of which outline a specific product or action (Popescu-Neveanu, 1971):

- expressive - manifested through more efficient production solutions;
- productive – expressed through combinations and recombinations, data associations;
- innovative – refers to a new solution that increases productivity;
- inventiveness – an idea is produced, an original solution that boosts theoretical or practical progress in a certain field.

Creative teaching involves the creation of creative learning contexts, which allow students to develop their innovative, evaluative and collaborative capacities (Cremin, Barnes, 2018).

Creative teaching is carried out in an environment that allows students to understand how things work, promotes learning through situations based on self-correction, self-evaluation, self-knowledge. Elements of creativity in teaching: imagination, originality, flexibility, decision-making, communication, motivation, collaboration.

The design of creative educational approaches and training situations that contribute to the stimulation of students' creativity, within curricular and extra-curricular activities, will certainly aim at the development of their transversal skills (Rotari, 2010):

- capitalizing and developing the spirit of observation, as a premise for the appearance and manifestation of creative behaviors;
- cultivating flexibility of thinking, divergent, imaginative and creative thinking, which will allow students to carry out authentic creative actions;
- developing the fluidity of ideas and associations in solving learning tasks (for example, by listing as many objects, phenomena, processes, elements of ideational content as possible, according to certain predetermined criteria);

To support students' interest in learning, teachers must design creative approaches, promote students' initiative and autonomy, give them access to searches, discoveries, proposed solutions, etc. Creative teaching aims at participative learning, in which the student is engaged in the rediscovery of knowledge through his own thinking effort, through problematization, discovery and heuristic dialogue.

To support creative teaching, Lucas and Spencer (2020) propose a series of principles:

- staff motivation - teachers and students;
- the integration of authentic, extracurricular, collaborative and reflection-based activities;
- the active involvement of students, including as designers of the didactic act;
- promoting learning based on the development mindset;
- creating a flexible learning space, because the classroom becomes a learning community;
- carrying out evaluation practices within the teaching process;
- the use of web networks as sources of documentation and intercommunication and collaboration between participants;
- accepting the challenge, the unexpected and unplanned elements.

Analyzing characteristics that define the creative attitude in learning, we identify a list of behaviors that the teacher will pursue in the creative challenge of learning. A student exhibits creative behavior when he engages in activities designed to develop individual and group creativity. Creative teaching challenges the student, thus (Bocoș, 2013):

- is actively involved in the learning process and adopts an open and creative attitude;
- thinks critically, has a spirit of observation, spirit of initiative and autonomy in action;
- explores the learning environment and discovers solutions to different problems;
- prefer active, divergent, imaginative and creative thinking;
- capitalize on their constructive imagination and inventiveness, problematize the contents they face, carry out investigations, case studies, discoveries;

- he has confidence in his own worth, a strong self-esteem, which motivates him and helps him feed his self-improvement tendency;
- assumes risks in the learning process, becomes responsible and autonomous and assumes responsibility for finding new solutions;
- does not get discouraged in the face of ambiguity and frustration, having a strong tolerance for them, perseveres in learning;
- creates unique, original curriculum products.

Creative teaching reconfigures the roles of the teacher, he is a mediator, facilitator, having a role in building the learning environment, in providing information sources, making contents accessible, guiding students to form their own search skills (skills, challenging knowledge, mediating relationships in the group (Joiţa, 2006). The teacher capitalizes on the students' points of view, stimulating their confidence in their own strength to issue new ideas, organizes favorable conditions for the construction and reconstruction of personal knowledge (Cerghit, 2008).

Contemporary models consider learning environments and learning cultures fundamental in teaching, because intellectual and material operations are challenged, they ensure the engagement of the student, the ability to collect, synthesize, organize, associate and communication of information (Cerghit, 2008).

Creative teaching starts with a series of interesting questions to the students to stimulate their curiosity, interest, motivation and desire to know. Also, through creative teaching, students gain self-confidence, develop self-control, the ability to communicate, cooperate, show their curiosity and become much more motivated and involved in teaching activities.

Understanding learning styles and their role is an important element of effective teaching for both students and teachers. The literature suggests that student motivation, achievement, and satisfaction increase as teaching methods complement students' learning styles. We find various classifications of learning styles, in which the active role of the student in learning is emphasized, which is considered an important premise in the creative manifestation in the didactic act. For example, Honey and Mumford classify individual learning styles according to their preference for learning from experience (an activist), reflective observation, process description and understanding of meaning (a reflector), observation and understanding. facts and information and their relationships, and understanding logic (a theorist) or doing and trying practical things (a pragmatist) (Pološki Vokić, Aleksić, 2020).

Through creative teaching, students are encouraged (Lucas, Spencer, 2020):

- to take responsibility and guide their own learning;
- to ask and question;
- to make connections and see the relationships thus established;
- to understand the possibilities;
- analyze ideas and reflect critically on ideas, actions and results;
- to think independently;
- to embrace new challenges and experiences;
- to see mistakes as the basis of good learning;
- to focus on progress in the learning process.

The design of the creative approach in teaching has the immediate and long-term consequence of ensuring effective learning and evaluation and depends a lot on the creativity of the teaching staff, but also on his capacity for improvement and continuous self-improvement. Some essential qualities of the creative teacher are: patience to create an individualized educational scenario in favor of a mechanized and repetitive instructional-educational process, enthusiasm and spontaneity in favor of strategies and methods designed from the perspective of predetermined objectives (Stan, 2014).

The creative attitudes of teaching staff direct their psycho-pedagogical skills in the direction of designing innovative pedagogical activities. Among the creative attitudes of teaching staff, the confidence in one's own strengths, a thorough professional training, cognitive interests and devotion to the profession, the attitude opposed to rigidity and conformity, perseverance in the search for optimal solutions, a value-adding attitude, receptivity to the new, respect for originality and its consistent cultivation and social engagement.

Regarding the internal relational framework, the interaction relationships between teachers play a fundamental role in their professional development, in the development of professional satisfaction and well-being, contributing to the achievement of a positive professional environment.

Regarding the internal relational framework, the interaction relationships between teachers play a fundamental role in their professional development, in the development of professional satisfaction and well-being, contributing to the achievement of a positive professional environment.

Studies examining the role of teachers' creativity in their preferred teaching style. The creativity of teachers plays an important role depending on the teaching styles they display. Some analyzes show that teacher creativity positively predicts teaching styles in which the focus is on facilitating learning and delegating learning responsibilities (Ghanizadeh, Jahedizadeh, Boylan, 2016).

School is an excellent place to foster students' creative thinking skills. In this sense, we find analyzes that show the positive influence of alternative school education on the creative performance of students at the university admission level (Gu, Ritter, Koksma, Dijksterhuis, 2021).

2.3. Design of creative didactic approaches

People think creatively when they work in groups. Therefore, most ideas for supporting creative teaching are in integrating creativity development strategies in teaching.

Brainstorming, the method of the storm in the brain, involves postponing the evaluation of the ideas issued for a later stage, in this way developing a constructive atmosphere, in which each idea is subjected to critical analysis, thus proposing original solutions. Brainstorming stimulates students' creativity by capitalizing on assimilated knowledge, which is combined and recombined inventively and innovatively, in an open context (Cristea, 2018). The method also aims to launch new ideas, conditioned by the quality of previous knowledge, combined and recombined at a higher creative level. Brainstorming is based on four fundamental

rules of creative thinking: overcoming obstacles, searching for ideas, suspending judgment of ideas, accepting all ideas and critically analyzing them.

The Frisco method, based on the interpretation of roles, approaches a problem from several perspectives, contributing to the development of students' linguistic, logical-mathematical and interpersonal intelligence, their empathic capacity and their imagination.

- the conservative values old methods, speaks for their maintenance, but does not exclude the possibility of improvements;
- the exuberant creates an imaginative, creative discussion framework that stimulates the other students to be creative;
- the pessimist is concerned with the bad aspects of any improvements, with dangers;
- the optimist identifies possibilities to achieve the solutions proposed by the exuberant, encourages colleagues to adopt a positive attitude.

Synectics aims to stimulate students' creativity by formulating ideas and hypotheses, using reasoning by analogy. Its purpose is to free participants from any constraints and help them freely express their views on a particular issue. The method instigates the development of new and original ideas, involves uninterested students, makes learning enjoyable, creative and playful, encourages participants to listen to ideas, seemingly irrelevant, but which can be used as clues for new ideas.

Creative controversy (also called structured or academic controversy) represents a way to use both the advantages of the traditional debate technique by using compromise techniques at the end of the method (Pânișoară, 2006). The specific function of this method is to highlight possible solutions, in complex situations, in which what is true is not found in a single part.

3. Conclusions

Student preferences in the teaching and learning process have changed considerably in the last decade. Students relate differently to the teaching act, they have developed new attitudes and different preferences for teaching, because they prefer interactive and participatory teaching approaches (class discussions, case studies, interactive presentations, etc.). They develop higher order thinking skills and prepare students for the challenges of social and professional life.

The reconsideration of the educational act is always based on interventions adapted to the training needs of the students, who will be future adults on the social and labor market. In this sense, efforts are useful to develop students' ability to face the challenges brought by innovative technology, to become innovators in the fields in which they will be active (Jackson, 2020).

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ENSEIGNER À L'ÈRE DES CHATBOTS : L'EXEMPLE DE ChatGPT*

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Résumé

Cet article explore l'intégration croissante des outils numériques, en particulier l'adoption de chatbots tels que ChatGPT, dans l'enseignement supérieur postpandémique. En se concentrant sur le contexte de l'enseignement supérieur au Maroc, l'étude qualitative, basée sur des entretiens avec 15 enseignants, examine les avantages potentiels et les implications de l'utilisation de ChatGPT. La méthodologie de l'article est basée sur une approche de catégorisation thématique de contenu pour analyser les réponses recueillies. Les résultats mettent en évidence deux grandes thématiques : la première explore les domaines d'application et les avantages perçus de ChatGPT, tandis que la seconde aborde les positions et préoccupations des enseignants concernant cette technologie, soulignant ainsi l'équilibre difficile entre la technologie et l'interaction humaine dans l'enseignement supérieur.

Mots-clés : *Enseignement supérieur ; Intelligence artificielle ; ChatGPT ; Etude qualitative ; Approche critique.*

TEACHING IN THE ERA OF CHATBOTS: THE EXAMPLE OF ChatGP

Abstract

We explore the increasing integration of digital tools, particularly the adoption of chatbots like ChatGPT, in post-pandemic higher education. Focused on the context of higher education in Morocco, the qualitative study, based on interviews with 15 teachers, examines the potential benefits and implications of using ChatGPT. Our methodology is grounded in a thematic content categorization approach to analyze the collected responses. The results highlight two main themes: the first delves into the application areas and perceived advantages of ChatGPT, while the second addresses teachers' positions and concerns regarding this

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technology, emphasizing the delicate balance between technology and human interaction in higher education.

Key words: *Higher Education; Artificial Intelligence; ChatGPT; Qualitative Study; Critical Approach.*

1. Introduction

À l'ère postpandémique, l'enseignement supérieur se caractérise par une intégration accrue des outils numériques. Récemment, les étudiants et les universitaires ont amorcé l'adoption de divers chatbots, tels que ChatGPT (Rudolph *et al.,* 2023). Cette transition vers les technologies conversationnelles suscite des réflexions profondes au sein du monde éducatif, où distinguer l'intelligence artificielle des ressources humaines devient un enjeu majeur (Léger, 2023). En première ligne de ces changements, les enseignants se retrouvent face à une dualité délicate entre les avantages potentiels offerts par la technologie et l'impératif intangible de l'interaction humaine dans le processus éducatif. Cet équilibre, toutefois, ne se dessine pas aisément, et la nécessité de répondre à ces défis émerge comme un impératif catégorique dans la redéfinition des pratiques pédagogiques.

Cet article aspire à explorer la perspective d'intégration de ChatGPT dans le contexte de l'enseignement supérieur marocain. Elle soulève l'interrogation suivante : dans quelle mesure cet outil peut être incorporé aux pratiques enseignantes ?

Notre approche méthodologique repose sur une étude qualitative à travers des entretiens menés auprès de 15 enseignants au Maroc. L'étude de terrain vise notamment à examiner les avantages perçus et à apporter des éclairages sur les implications de cette intégration. Elle vise également à mieux comprendre les perceptions, les défis et les préoccupations associés à l'utilisation de ChatGPT dans le cadre de l'enseignement supérieur.

L'analyse des réponses recueillies a suivi une démarche de catégorisation thématique de contenu (Bardin, 2013). La thématisation a été continue : les thèmes ont été identifiés et notés au fur et à mesure de la lecture du corpus, puis regroupés et fusionnés au besoin, pour finalement être hiérarchisés sous la forme de thèmes centraux regroupant des thèmes associés, complémentaires, etc. (Paillé et Mucchielli, 2021).

Les résultats s'articulent autour de deux grandes thématiques. D'une part, la première partie de l'article abordera les domaines d'application, les utilisations de ChatGPT et les avantages perçus. D'autre part, la seconde partie explorera les diverses positions et préoccupations de nos interlocuteurs à l'égard de ChatGPT.

2. Domaines d'application et avantages perçus de ChatGPT

Les résultats de l'enquête qualitative réalisée auprès des enseignants ont mis en lumière les avantages offerts par ChatGPT en tant qu'outil d'assistance à la rédaction. Nos interlocuteurs ont identifié des pistes intéressantes permettant son intégration dans les pratiques enseignantes.

Les études sur l'intégration des technologies dans l'éducation ont relevé les retombées positives de l'adoption de nouvelles approches pédagogiques. Récemment, parmi ces outils, les modèles de traitement du langage naturel et les agents conversationnels se démarquent. Comme le soulignent Khosravi *et al.* (2022), l'intelligence artificielle peut jouer un rôle important et croissant dans l'éducation. Un exemple significatif concerne les systèmes d'enseignement personnalisés qui sont déjà bien établis, avec des preuves croissantes de leur efficacité pour renforcer le processus d'apprentissage (Khosravi *et al.,* 2022). Les chatbots, à l'instar de ChatGPT, ont le potentiel d'ouvrir de nouvelles perspectives et de repousser les limites de l'enseignement traditionnel. Avec sa capacité à analyser et à générer du texte de manière fluide, ChatGPT peut ouvrir les portes d'un apprentissage personnalisé et adapté à chaque individu (Lison & Verchier, 2023).

Les enseignants interrogés comprennent l'importance croissante de la personnalisation du contenu éducatif pour répondre aux besoins individuels des apprenants. Ils considèrent que les technologies basées sur l'IA peuvent jouer un rôle crucial dans cette personnalisation en permettant l'adaptation du contenu en fonction des préférences et des niveaux de compétence de chaque apprenant. Cependant, ils soulignent que cela nécessite une approche réfléchie pour éviter que la personnalisation ne devienne superficielle.

Par ailleurs, nos interlocuteurs soulignent les défis inhérents à la rédaction pédagogique à l'ère de l'intelligence artificielle, mettant en lumière la nécessité d'adapter le contenu éducatif de manière à répondre aux besoins individuels des étudiants : « *Les principaux défis sont d'adapter le contenu au niveau des étudiants, de maintenir l'engagement et de fournir des explications claires sans sacrifier la profondeur* » (Saïd, Professeur des Techniques de Montage) ; « *L'outil devrait aider à améliorer l'efficacité de ma rédaction, tout en me permettant de personnaliser le contenu selon mes besoins spécifiques et ceux des étudiants* » (Camélia, Professeure de Littérature Française).

L'un des défis majeurs identifiés est l'effort nécessaire pour personnaliser le contenu en fonction du niveau de compréhension des étudiants tout en maintenant leur intérêt. Cela implique de fournir des explications claires et engageantes, une tâche qui peut être complexe compte tenu des divers niveaux de compétence et de préférences d'apprentissage au sein d'une classe. Les enseignants voient les outils d'IA, tels que ChatGPT, comme des ressources potentiellement précieuses pour relever ces défis. Par exemple, la capacité de générer automatiquement des explications adaptées à différents niveaux de compréhension, d'ajuster le ton pour maintenir l'intérêt, et de personnaliser le contenu en fonction des besoins spécifiques de chaque étudiant. Ces fonctionnalités pourraient alléger la charge de travail des enseignants tout en améliorant la qualité de l'apprentissage.

En tant que créateurs de contenu éducatif, les enseignants reconnaissent l'aide que peut apporter les outils de rédaction assistée : *« J'ai déjà utilisé des outils de rédaction assistée pour enrichir du contenu éducatif. J'ai dû bien évidement adapter. Je reconnais que cela permet d'économiser du temps, mais il est essentiel d'ajouter une touche humaine lorsqu'on utilise ces outils »* (Mehdi, Professeur en Business &

Administration) ; *« La créativité est essentielle pour rendre le contenu éducatif captivant. L'assistance automatisée peut améliorer l'efficacité, mais je tiens toujours à préserver ma touche créative »* (Ahlam, Professeure de Didactique).

Nos interlocuteurs considèrent ChatGPT comme une solution pour optimiser leur temps en générant rapidement des idées et des suggestions, tout en leur laissant la tâche cruciale de personnaliser et de perfectionner le contenu en fonction des besoins spécifiques de leurs étudiants. Cette approche pourrait également assister les enseignants dans la diversification de leurs approches pédagogiques en intégrant des perspectives nouvelles et stimulantes.

Les chatbots, dont ChatGPT, peuvent être intégrés dans la conception de supports de cours, de cartes mentales, de questionnaires à choix multiples (QCM) et même d'exercices corrigés : *« La préparation d'exercices pertinents est essentielle pour maintenir l'engagement des étudiants. J'ai découvert que ChatGPT peut générer des exemples et des exercices adaptés à mes leçons en spécifiant simplement le sujet et le niveau de difficulté. Cela m'a permis de diversifier les activités d'apprentissage de manière efficace »* (Abdelhamid, Professeur de Français).

Il ressort des témoignages recueillis auprès des enseignants des perspectives variées quant à l'utilisation d'un outil de suggestion de contenu basé sur l'intelligence artificielle pour la rédaction de documents pédagogiques : *« L'integration de ChatGPT devrait se faire immédiatement, en commençant par l'accepter et bien maîtriser son usage. Il est essentiel de comprendre qu'il apporte une valeur ajoutée, mais ne remplace pas le travail humain. C'est un peu comme la présence des traducteurs automatiques, elle n'a pas éliminé l'apprentissage des autres langues »* (Mohamed, Professeur de Communication & Développement Personnel).

Par ailleurs, les professeurs évoquent la nécessité d'évaluer l'efficacité d'un tel outil. Plusieurs critères ressortent de manière récurrente. La précision et la pertinence du contenu généré sont souvent citées comme primordiales. Les enseignants souhaitent que l'outil propose des suggestions qui correspondent rigoureusement aux objectifs pédagogiques et au niveau des apprenants. De plus, la convivialité de l'interface et la facilité d'intégration dans leur flux de travail existant sont des considérations importantes. Certains mettent en avant l'importance de la personnalisation, souhaitant avoir la possibilité de paramétrer l'outil en fonction de leurs propres préférences pédagogiques et du style d'enseignement. En fin de compte, la manière dont l'outil peut réellement améliorer la qualité et l'efficacité de l'enseignement est un critère central dans l'évaluation de son utilité.

Les défis liés à l'adaptation constante aux évolutions pédagogiques et technologiques ne sont pas négligés. Les enseignants reconnaissent la nécessité « de rester à jour avec les nouvelles tendances » et d'intégrer de manière appropriée les avancées technologiques dans leurs supports de cours. Ils voient cela comme une opportunité d'améliorer l'expérience d'apprentissage en intégrant des médias interactifs, des simulations et d'autres outils innovants.

Les enseignants interrogés évoquent enfin certains avantages que les agents conversationnels peuvent offrir aux étudiants. Ils soulignent que ChatGPT représente un outil potentiellement bénéfique pour faciliter les apprentissages des étudiants, à

condition d'adopter une approche vigilante et d'éduquer à un usage raisonné. Ils reconnaissent que cet outil peut jouer un rôle essentiel dans le dépassement des obstacles créatifs des étudiants, en améliorant la structure de leurs phrases et en développant leurs compétences rédactionnelles, par exemple. Cependant, les enseignants ont également mis en lumière des défis importants. Ils soulignent la nécessité de superviser étroitement l'utilisation de ChatGPT afin de garantir la qualité des productions écrites des étudiants. Cette surveillance attentive s'avère cruciale pour maintenir un équilibre entre l'exploitation des avantages pédagogiques de l'outil et la prévention des éventuels écueils liés à une utilisation non maîtrisée.

3. Analyse des positions et préoccupations des enseignants à l'égard de ChatGPT

Nos interlocuteurs soulignent les avantages potentiels des technologies de l'Intelligence Artificielle (IA), tout en reconnaissant les préoccupations liées à l'exactitude, à la structuration et à l'adaptation du contenu. La combinaison d'une expertise pédagogique solide avec les possibilités offertes par les technologies de l'IA peut conduire à des expériences d'apprentissage enrichissantes et plus efficaces.

Par ailleurs, les réponses recueillies révèlent des positions divergentes concernant l'usage de ChatGPT. Les enquêtés considèrent que cet outil pourrait être particulièrement bénéfique à différentes étapes du processus de rédaction. Certains voient son utilité principalement dans la génération d'idées et la structuration du contenu, soulignant que l'IA pourrait aider à développer des concepts novateurs et à organiser les informations de manière cohérente. D'autres estiment que l'outil serait plus utile lors de la rédaction initiale, en aidant à surmonter « le blocage de l'écran blanc » et à produire un premier brouillon. Enfin, un groupe d'enseignants voit l'utilité de l'IA dans la phase de révision, où elle pourrait proposer des suggestions pour améliorer la clarté, la concision et la cohérence du texte.

La préférence quant à l'utilisation d'un outil entièrement automatisé ou d'un système de suggestions à intégrer varie également selon les témoignages. Certains enseignants préfèrent un système automatisé qui génère du contenu complet, ce qui pourrait accélérer le processus de rédaction. D'autres optent pour un système de suggestions, estimant ainsi pouvoir conserver un plus grand contrôle sur le contenu tout en bénéficiant d'idées novatrices proposées par l'IA. Certains mentionnent également que le choix dépendrait du type de document à rédiger et de l'objectif visé.

La perception de la créativité dans la rédaction de documents pédagogiques est aussi un point de divergence. Certains enseignants considèrent que la créativité est essentielle pour rendre le contenu engageant et captivant pour les étudiants, et craignent qu'une assistance automatisée puisse altérer cette dimension. D'autres estiment que l'IA pourrait en fait stimuler la créativité en proposant des idées innovantes, permettant ainsi aux enseignants de se concentrer davantage sur la mise en œuvre créative de ces idées dans leurs documents.

La montée en puissance de l'IA soulève des questions éthiques et scientifiques cruciales. Confier des décisions à des algorithmes suscite des débats sur la pertinence de cette délégation, soulignant que la décision ultime, doit demeurer humaine. Dans

le contexte éducatif, les défis sociaux actuels exigent une mise à jour des modèles pédagogiques. Mais, contrairement à certains domaines techniques, où l'utilisation de systèmes d'IA peut générer des résultats aux avantages largement acceptés, le domaine de l'éducation se distingue par la complexité des interactions humaines (Romero *et al.*, 2023).

Malgré l'enthousiasme pour les avantages pratiques de l'IA, son impact sur l'autonomie humaine, la créativité et l'éthique nécessite une approche critique. Les témoignages recueillis mettent en avant certains avantages mais soulèvent également des limites et des préoccupations liées à l'intégration des agents conversationnels dans le cadre de l'enseignement supérieur. Les enseignants insistent sur l'importance de maintenir un équilibre entre l'automatisation et l'intervention humaine. Ils mettent en exergue une préoccupation importante quant à la manière dont les informations générées par ChatGPT sont interprétées et utilisées. Ces dernières ne doivent pas être prises « pour argent comptant », il est nécessaire de les croiser avec d'autres sources.

Nos enquêtés insistent sur le fait que l'utilisation de ChatGPT ne devrait pas se substituer à l'engagement intellectuel humain, soulignant ainsi la nécessité d'une vérification et d'une mise à jour constantes des contenus générés. Cela suggère une approche où l'IA est intégrée comme un partenaire collaboratif, plutôt que comme une solution autonome. Le verbatim suivant illustre cette analyse : « *Indépendamment des opinions divergentes, ChatGPT présente de nombreux avantages, tels qu'une réponse rapide et une gestion efficace de la charge de travail et du temps. Cependant, il n'est pas exempt d'inconvénients. Ainsi, il est crucial de trouver un équilibre entre l'automatisation et l'intervention humaine. L'utilité de ChatGPT dépend largement d'un processus de vérification et de mise à jour des contenus. Les informations fournies par ChatGPT devraient être considérées comme une documentation facilitant l'exécution des tâches plutôt que comme une solution prête à l'emploi, nécessitant toujours un effort intellectuel supplémentaire* » (Marwan, Professeur du Web Journalisme).

La question de l'intégrité et de l'authenticité du contenu généré par ChatGPT est au centre des préoccupations de plusieurs enquêtés. Ces derniers manifestent des inquiétudes légitimes quant à la précision et à la pertinence du contenu généré : *« Je suis préoccupée par la possibilité d'erreurs ou de contenus inappropriés générés par la machine. L'exactitude et l'authenticité sont cruciales »* (Khadija, Professeure de Chimie). Le risque de voir émerger des erreurs ou des informations trompeuses pourrait nuire à l'apprentissage des étudiants. Il est ainsi important de conserver l'aspect humain et l'expertise pédagogique dans le processus de création de contenu, afin de garantir des matériaux éducatifs de haute qualité.

La question de la créativité et de l'originalité est également soulevée, certains enseignants craignent que l'utilisation d'un tel outil puisse conduire à une uniformisation du contenu pédagogique, limitant ainsi la diversité des approches et des perspectives présentées aux apprenants : *« L'utilisation excessive de l'automatisation pour des tâches créatives pourrait entraîner une homogénéisation de la créativité. Si de nombreuses œuvres d'art, de textes, de musiques, ou d'idées innovantes sont générées par des algorithmes, cela pourrait conduire sans doute à*

une perte de diversité et d'authenticité » (Mourad, Professeur de Philosophie). Les enseignants veulent conserver leur voix pédagogique et leur créativité. Le contrôle sur le contenu final émerge comme un élément clé, reflétant le désir de maintenir un niveau élevé de qualité et de pertinence éducative.

Cette transition soulève la question cruciale de la valeur du travail humain. L'enthousiasme pour l'IA ne doit pas occulter les défis éthiques, car les machines manquent d'empathie et de conscience morale, pouvant amplifier les biais et renforcer les inégalités. La créativité humaine, enracinée dans l'expérience éducative, demeure insaisissable pour les algorithmes et échappe à toute automatisation.

Les enseignants insistent enfin sur l'importance de stimuler la réflexion critique et la curiosité intellectuelle des étudiants lors de leurs interactions avec les chatbots. Cela vise à former des apprenants autonomes et réfléchis dans un monde où l'accès à l'information devient de plus en plus automatisé. Certains s'inquiètent également de la dépendance excessive à l'égard de la technologie, craignant que cela puisse entraîner une diminution des compétences de rédaction des apprenants. L'outil doit être utilisé comme un assistant et non comme un substitut à la faculté rédactionnelle. De plus, il est évoqué le besoin de sensibiliser les étudiants à une utilisation responsable et éthique de l'IA, pour éviter certaines problématiques, comme celles liées au plagiat.

L'IA, malgré les potentialités qu'elle peut offrir, requiert donc une réflexion approfondie dans le domaine éducatif. Les enseignants ont pour mission fondamentale de former des citoyens éclairés, une tâche de plus en plus cruciale à l'ère de l'intelligence artificielle qui soulève de nouvelles questions éthiques (Boissière & Bruillard, 2021).

En somme, les réponses des enseignants mettent en évidence la complexité des considérations entourant l'intégration d'outils automatisés de rédaction dans le domaine éducatif. L'utilité, les préférences et les préoccupations varient en fonction des étapes du processus de rédaction, de la perception de la créativité et des craintes concernant l'impact sur l'apprentissage et le développement des compétences des étudiants.

Les propos des enseignants reflètent un équilibre complexe entre l'ouverture à l'égard de l'intégration de l'intelligence artificielle dans la création de documents pédagogiques, l'importance de critères tels que la précision et la personnalisation pour évaluer l'efficacité de l'outil, ainsi que les préoccupations inhérentes à la préservation de l'exactitude, de l'authenticité et de la diversité du contenu éducatif. Une approche réfléchie, intégrant les avantages potentiels de la technologie tout en maintenant des normes élevées en matière d'éducation, semble être une voie à explorer dans ce domaine.

4. Conclusion

Il est important de poursuivre les recherches dans le domaine de l'utilisation de ChatGPT en tant qu'outil assistant pour les enseignants. Les résultats de notre étude ont fourni des aperçus intéressants sur les avantages et les préoccupations liés à cette approche novatrice. Cela ouvre la voie à de futures investigations visant à

optimiser l'intégration éthique et efficace de cette technologie émergente dans les environnements éducatifs.

L'un des principaux points que nous pouvons soulever, pour conclure cet article, est la nécessité d'une formation spécifique pour les enseignants. À mesure que les technologies de traitement du langage naturel, telles que ChatGPT, deviennent plus courantes dans les salles de classe, il est essentiel d'offrir aux enseignants les compétences nécessaires pour les utiliser de manière productive. Ces formations pourraient non seulement les familiariser avec les fonctionnalités de l'outil, mais aussi les aider à comprendre comment l'intégrer de manière transparente dans leurs méthodes pédagogiques existantes. Cela favoriserait une utilisation efficace et éthique de ChatGPT, en évitant les écueils potentiels liés à cette technologie.

En mettant en relief les avantages et les limites identifiés par les enseignants, cette étude apporte des perspectives aux chercheurs mais également aux décideurs éducatifs. ChatGPT peut être un outil précieux dans le domaine éducatif, mais l'expertise humaine des enseignants reste irremplaçable. Cet outil peut servir de guide et de ressource complémentaire, mais il ne doit pas supplanter le rôle des enseignants en matière d'évaluation, d'encadrement et de développement des compétences des étudiants.

À travers les smartphones, les tablettes et les chatbots éducatifs, l'individu est en train de devenir objet de son propre progrès scientifique et technologique (Grassi, 2022). Par conséquent, l'intégration réussie de ChatGPT dans l'écosystème éducatif dépendra de la capacité à exploiter le potentiel de cette technologie tout en maintenant un équilibre entre l'humain et la machine. Les décideurs doivent continuer à encourager la recherche et le développement dans ce domaine, tout en veillant à élaborer des lignes directrices éthiques et pédagogiques pour guider l'utilisation de ces outils. Cela permettra de maximiser les avantages de ChatGPT sans compromettre les principes fondamentaux de l'éducation et de l'apprentissage.

L'alliance entre le savoir-faire des enseignants et les capacités de ChatGPT peut transformer la manière dont les étudiants abordent la rédaction et l'apprentissage en général. Toutefois, des défis subsistent et nécessitent une approche réfléchie et équilibrée. À mesure que le paysage éducatif continue d'évoluer, l'intégration de dispositifs, comme ChatGPT peut jouer un rôle essentiel dans la préparation des apprenants à réussir dans un monde de plus en plus axé sur la technologie.

En se basant sur les résultats et les conclusions de cette étude, nous faisons enfin émerger les recommandations suivantes :

- Développer des programmes de formation pour les enseignants : les acteurs de la formation continue devraient proposer des programmes de formation spécifique pour les enseignants, visant à les familiariser avec l'utilisation éthique et efficace de ChatGPT. Ces formations devraient couvrir non seulement les aspects techniques de l'outil, mais également mettre l'accent sur la manière de l'intégrer dans les pratiques pédagogiques existantes.
- Promouvoir une utilisation complémentaire : ChatGPT ne doit pas être considéré comme un substitut aux enseignants, mais plutôt comme un outil complémentaire. Intégrer ChatGPT dans des activités d'apprentissage spécifiques

peut apporter une valeur ajoutée, tout en conservant le rôle central des enseignants dans l'encadrement et l'évaluation des apprenants.

- Élaborer des lignes directrices éthiques : les établissements d'enseignement et les autorités compétentes devraient collaborer pour élaborer des lignes directrices éthiques claires pour l'utilisation de ChatGPT. Cela peut inclure des directives sur son usage, les types d'activités appropriées ou encore des mesures pour prévenir la dépendance à la technologie.
- Encourager la créativité et la pensée critique : lors de l'intégration de ChatGPT dans les activités de rédaction, il est important de veiller à ce que les étudiants continuent de développer leur créativité et leur pensée critique.
- Soutenir la recherche continue : les chercheurs devraient continuer à étudier l'impact de l'utilisation de ChatGPT dans les environnements éducatifs. Cela peut inclure des études sur l'engagement des apprenants et les effets à long terme sur l'apprentissage. Les résultats de telles études peuvent guider l'évolution des pratiques pédagogiques.
- Favoriser la collaboration entre enseignants et spécialistes en IA et robotique éducative : une collaboration étroite entre les enseignants et les spécialistes est essentielle pour développer des approches efficaces d'intégration de ChatGPT. Les enseignants peuvent fournir des informations pratiques sur l'utilisation en classe, les spécialistes peuvent, quant à eux, continuer à améliorer les systèmes pour optimiser cette utilisation.

En conclusion, l'utilisation de ChatGPT en tant que technologie assistante pour les enseignants offre des opportunités. Cependant, son intégration doit être soigneusement planifiée et guidée par des principes éthiques et pédagogiques. Avec une approche équilibrée et réfléchie, ChatGPT peut contribuer de manière significative à l'avenir de l'éducation en favorisant une pensée critique et une préparation aux compétences nécessaires dans le monde de demain.

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FACILITATING THE TRANSITION FROM SECONDARY TO HIGHER EDUCATION - EMPIRICAL STUDY CONDUCTED IN THE UNIVERSITY OF CRAIOVA*

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Abstract

The process of making the transition from secondary to higher education easier involves providing support and guidance to students while they navigate the challenges of entering a new academic environment. The transition from high school to university is a major event in a student's life. Not only the new responsibilities a student faces, such as living away from home, less direct support from the family environment, the responsibility for their own finances, can create difficulties or cause stress, but also the new academic culture to which they must adhere, can lead to adaptation difficulties or even to the abandonment of university studies.

Specialized literature presents ways for the university environment to help students during this transition. In practice, each university tries to discover and implement various ways to facilitate the adaptation and integration of young people in the university academic environment. Orientation programs are held to familiarize students with the campus, academic resources, and available support services. This helps them feel more comfortable and connected to their new educational setting. Students need academic advising to understand the requirements and expectations of their chosen program, they need guidance on course selection, degree planning, and strategies for success in higher education. Young people need the training and development of study and also time management skills.

The present study is a diagnostic one and aims to investigate the needs and expectations of first-year students, after their first month of academic activity, enrolled in the study programs of the University of Craiova, in order to be able to identify the programs that can help them, facilitating their transition from secondary to university education. We consider it important to facilitate the adaptation of the transition from secondary to higher education because the elements of novelty that come with the

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university period require a state of preparation of the young people who need support to discover and internalize the demands of the academic environment.

Key words: *Transition; Facilitation; Integration of students into the academic life; Academic advising.*

1. Introduction

The transition from high school to university life is often very demanding for the first-year students, especially during the first weeks of the academic year, and these difficulties are observed on a personal level (through the separation from their family and resource management), on an academic level (a greater degree of freedom regarding the choice of the optional curriculum, own management of participation in courses, which is no longer mandatory, time management, management of individual study activities), as well as on a social level (interactions with new colleagues, high school friendships are redefined, new groups are formed).

The effort to adapt to all these changes simultaneously makes the transition a critical one, especially during the first six weeks, which is why many researches on adaptation to university life (Sava *et al*., 2014) choose to identify the students' opinion about the manner this transition was institutionally supported, respectively, about the way in which they consider that they have adapted after this period.

In recent times, the first year of university studies has begun to be the subject of several researches carried out in several university centers in Romania, determined in particular by the wave of decrease in the enrollment of graduates in university studies and the increase in the phenomenon of dropping out of university studies after the first year.

Considering that the aspects related to this topic have not been exhausted, we consider it necessary to focus on studying the process of transition after the first month of academic teaching activities, because, as C. C. Jung said, a person adapted to an environment is not necessarily integrated in that environment.

Research in the field indicates that early experiences in college education are critical in establishing values, attitudes, and approaches to learning that will shape the lifelong learning experience beyond the undergraduate years (McInnis & Jones, 1995). Another aspect indicated by research is related to the fact that the first year is identified as the one during which most students drop out of university studies. There are authors who believe that if the students end up completing the first year of studies, the battle is more than half won, and regardless of difficulty, they find the resources to complete.

The processes through which young people come to identify with, and become members of a community of study have been compared to the processes through which individuals move from youth to full adulthood in traditional societies or through which immigrants are accepted into a new community: the stages of separation (from the previous group), the transition (the interaction with the new group) and finally the incorporation or integration into the new group. During these first two stages – separation and transition – the first tertiary year, the students may

be most at risk of withdrawing from their studies or a particular university altogether (Hillman, 2005).

2. The transition from pre-university education to university

The concept of transition to higher education refers to the transition from secondary education to higher, university education. The studies of the last decades (Bean, 2005; Chickring and Reisser, 1993; Coulon, 1997; Fidler, 1991; Pascarella and Terenzini, 2005; Schnell and Doetkott, 2003) have made an important contribution in establishing the foundations for determining the transition to university education as a vast field of research whose scientific and social relevance remains important even today.

The transition from school to university is widely recognized as a significant leap towards greater personal and academic independence and autonomy for most students (Kyndt *et al.,* 2017; Murtagh, 2012). This transition is a crucial time in the student period because it can lay the basis for successful development and future achievement (Hultberg *et al.,* 2008; Krause and Coates, 2008). However, for many young people entering higher education, this transition represents an important developmental step in their journey to adulthood, requiring significant social and emotional adjustment (Young *et al.,* 2020). Moving from the controlled environment provided in school and at home to accepting personal responsibility for the academic, financial and social aspects of your life is challenging (Belfield *et al*., 2017; Lowe and Cook, 2003; Parker *et al.*, 2004). The complex and demanding experience of this transition has the potential to affect mental health and well-being (Ran *et al.,* 2016; Thorley, 2017).

Change is something that happens to people and they may or may not agree with it. When change happens quickly, an effective transition is made. When we are faced with change, the transition can often take longer. Higher education can be seen as consisting of several concurrent transitions (Jindal-Snape 2010) both in context (such as moving to a new city, in a new system) and in interpersonal relationships (such as forming new relationships with students, colleagues, university support and academic staff, as well as changes to the already existing relationships with family and friends at school). Thus, transition is seen as a continuum process where the levels of support should be adjusted accordingly (Jindal-Snape 2010).

From the specialized literature we have selected, based on the relevance for the transition of students to university education, useful models for understanding the numerous changes experienced by the students during their transition to higher education.

During a transition, young people experience feelings similar to other life events, such as changing jobs, moving from one country to another, or even losing a loved one (Schaetti, 1996). Although students experience the transition to higher education in different ways, for almost all of them, the change from a familiar environment to an unfamiliar one is a time of disequilibrium (Jackson, 2010). In other words, the transition to university life involves changes and potential challenges that young people may experience.

Overview of the potential changes and challenges students may experience as indicated in the published literature.

Table 1. Challenges and Strategies refferd to type of changes

Types of changes	Potential challenges	Strategies
Environment	Depression, anxiety, isolation	Developing new supportive relationships
Home		Adjustment, adaptation
	Fear of being ignored	
Culture shock		
Financial	Stress, worries about the future	Seeking institutional support, monitoring expenses
Credit/ loan (family, friends, bank)		
Social	Anxiety	Openness and flexibility
New friends	Isolation, Feelings of not belonging	Involvement in formal and informal activities, development of self-efficacy
New interactions with the academic staff	Stress, anxiety, unhappiness	Communication and compromise
Roommates/ apartment		
Academic	Anxiety, confusion	Interactions with colleagues, participation in student organizations
Learning, environment	Disappointment, stress	Induction processes, self-management of expectations
Activities, expectations	Stress, anxiety	Developing self-knowledge, time management, academic development, information literacy
Performance	Stress, anxiety, fear of failure	Development of communication, of academic study skills, development of self-efficacy and critical self-reflection
Presentations and exams		

The Bridges Transition Model developed by Bridges (2011) as a general view of the change process, distinguishes three overlapping phases. People enter the first phase (Ending, Losing and Letting Go) when change is first presented to them and experience emotions of fear, denial, anger, sadness, disorientation, frustration, uncertainty and a sense of loss. This phase could represent the students' first weeks at university when they go through external changes that are related to the new environment (different location and culture) as well as the experience of sharing an apartment or living in a student dormitory with other students, together with the shock of the new academic environment. These changes can cause students to experience feelings of homesickness, isolation, depression, anxiety, unhappiness, and confusion (Denovan and Macaskill 2013; Ramachandran 2011; Thurber and

Walton, 2012). The second phase, the "Neutral (Transitional) Zone" is where people are still attached to the old situation while trying to adjust to the new one. In this phase, individuals are often confused, impatient and unsure as they experience skepticism, low productivity and anxiety about their role. Specific to student transitions, external and internal changes in this phase can lead to anxiety due to meeting new people; stress and anxiety about academic performance; fear of being embarrassed by not being able to answer questions during presentations and stress and anxiety before, during and days after the exam has taken place (Gu *et al*., 2010; Wrench *et al.,* 2013; Yumatov *et al.,* 2001). People are considered to have entered the third phase, the "New Beginning" when they begin to embrace the change initiative and begin to build the skills they need to work successfully in the new way. In other words, they experience openness to learning, high energy, and a renewed commitment to their role. In terms of student transitions, this may be when students become more confident as they progress through university and adjust to university learning routines. For example, they are more organized, prepared and have learned to plan ahead. The transition model developed by Bridges, although developed for an organizational environment, could be considered relevant for describing student transitions.

Another model that can contribute to understanding the experiences students have during their transition to higher education is the U-curve Adjustment Theory (Risquez *et al.,* 2008). This model, which derives from organizational literature (Oberg 1960), was adapted by Risquez *et al.* (2008) and describes three phases: Honeymoon, Culture Shock and Adjustment in student transitions. The first phase is considered to be very short. At this stage, most students about to enter university envision a life with opportunities for personal, social and intellectual growth (Pancer *et al.,* 2000). The second stage, that of culture shock, is characterized by feelings of disappointment. During this phase, the student may experience high levels of anxiety associated with academic demands, feelings of isolation and alienation, stress, homesickness, a sense of loss, detachment, and even boredom. Students experience these emotions due to changes in their environment (location and culture shock), their social life (meeting new people, sharing an apartment/ room, interacting with academics), and their academic and learning environment (Denovan and Macaskill 2013; Gu *et al*., 2010; Thurber and Walton 2012; Wrench *et al.,* 2013). The third phase is the adjustment phase when students begin to function effectively in the new environment. For example, they become more motivated, develop a sense of communion with other students, as well as develop new learning routines.

The models mentioned so far have only focused on the first few weeks of university. Although the first few weeks are of particular importance for successful transitions (Wilson *et al.,* 2014), it would be incorrect to say that the transition process starts or stops there.

The Student Experience Model is a result of a study by Burnett (2007), and although this model focuses heavily on the first year of college, it provides a more holistic view by perceiving the transition process as a continuum of cohesive experiences that can appear over the university years, from the first to the last year.

This model identifies six phases: Pre-transition; Transition; Orientation Week; First Year Student Induction Programmes; The Middle Years and Capstone or Final Year Experience.

3. Empirical study carried out at the University of Craiova

The practical part is embodied in a quantitative analysis of the data obtained by using a quantitative research method, more precisely the sociological survey, because through this research we want to find out how the transition from high school to university was achieved for a relatively large number of students.

The effort to adapt to all the simultaneous changes that occur when entering university education makes the transition a critical one, especially during the first six weeks, therefore this study on transition and adaptation to university life is focused on identifying the students' opinion, on the way in which this transition was institutionally supported, respectively about the manner in which they consider that they have adapted after this period.

The research tool used is a questionnaire adapted for the study of student transition. It includes a number of 10 questions with reference to the changes they go through during the transition period: environmental, financial, social, academic. The research was conducted at the end of the first month of the academic year 2023-2024. The questionnaire was sent via google forms to all the students from three faculties of the University of Craiova: the Faculty of Physical Education and Sport, the Faculty of Economics and Business Administration and the Faculty of Law. The students had 21 days to answer the questionnaire. At the end of the period 390 completed questionnaires were recorded. The respondents are students of the Faculty of Physical Education and Sports in proportion of 61.5%, of the Faculty of Law 23.1% and of the Faculty of Economics and Business Administration in proportion of 15.4%. The students who participated in the study are between 18-24 years old, 87.2%, and 13.8% are between 25-45 years old.

Next, we will present the interpretation of the collected data, which are grouped according to the dimensions followed in the students' transition to university life.

Because the decision to attend a university is very important, and in recent years higher education institutions have made efforts to develop collaboration programs with high schools in the regions where they operate, we considered it important to identify the ways in which study participants have made the decision to attend the University of Craiova:

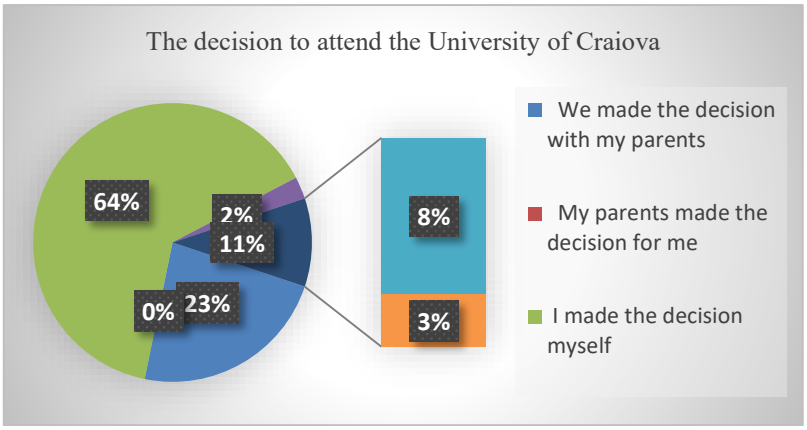

Figure 1. The decision to attend the University of Craiova

Most of the respondents made the decision to attend the University of Craiova courses, even if more than half (56.4%) did not visit the University of Craiova before enrolling in the faculty.

The first change that occurs as a result of enrolling in university studies is that regarding the home and the new relationships, either with roommates, if they live on the university campus, or with those with whom they share a rented apartment, or in the situation in which they live alone with the states they experience as a result of this situation.

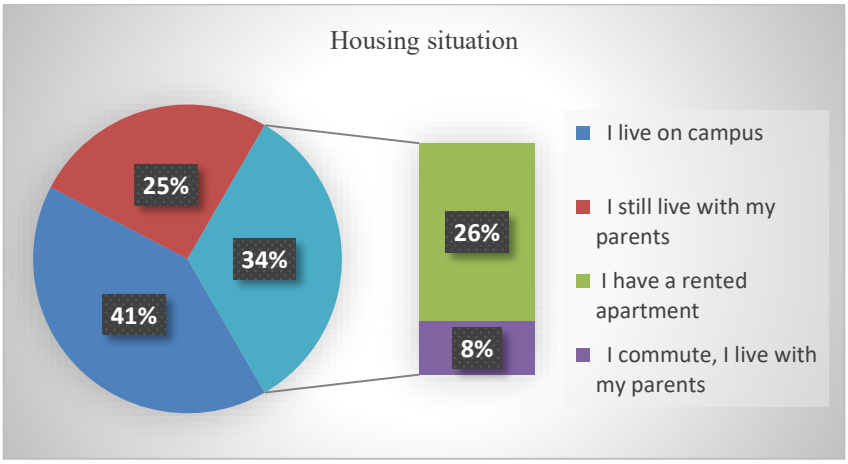

Figure 2. Housing situation

Of the respondents, 34% live in student dormitories, 26% have a rented home, and the remaining 40% still live with their parents. Of those who go through a change of residence, more than half had difficulties adapting to dorm life or to the situation of living in a rented house, but without their parents.

The difficulties listed by the students who changed their housing situation once they entered university are numerous and fall mainly into the relational category ("it was the first time I lived with a foreign person", "it is very difficult to harmonize the schedule", "I need to have more self-control", "I need to be more careful how I behave when my colleague is sleeping or studying", "I think we will have to establish a set of rules, in order to be able to live in the same apartment"). From an emotional point of view, leaving home made some of the students experience a very wide range of negative states, from sadness, anxiety, isolation, feelings of abandonment, and others to feel responsible, mature.

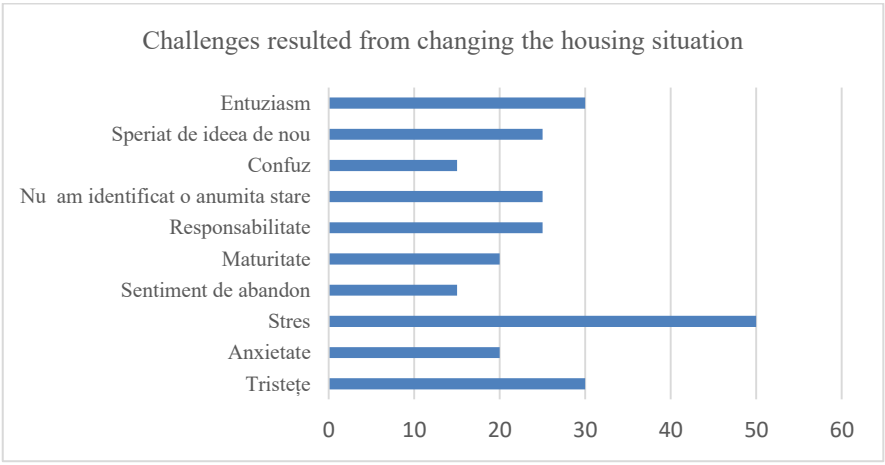

Figure 3. Challenges resulted from changing the housing situation

From a financial point of view, the difficulties related to the large expenses that the parents have covered, whether it is renting a house or staying in a dormitory, the subsistence expenses that the parents also support and their concern regarding the granting of scholarships study or looking for a part-time job to support themselves. For 75% of the respondents, the parents are the ones who support the expenses for university studies, at least during the initial period.

In order to capture the social dimension, we asked the participants in the study to describe the first week of student life: "It was an interesting week, full of opportunities and new people. However, it was also quite stressful because I was away from my familiar surroundings, among people I don't know, impediments doubled by some personal problems. But overall it was a pleasant experience"; "The first week was difficult, because I'm shy and I haven't managed to make friends quickly, but with time I settled in and even met a lot of people"; "Hard from all points of view, leaving home, getting to know the faculty, new colleagues and teachers"; "During the first week as a student, I felt a sense of disorientation in relation to the activities I took part in". Most of the answers pointed to aspects related to anxiety, feelings of not belonging, disorientation, stress, unhappiness, but there were also answers in which we identified enthusiasm, joy.

The respondents learned about the subjects they are going to study from the professors they interacted with, from the timetable they studied on the notice board or on the faculty website. The students were also presented with the subject sheets and implicitly the requirements and expectations for the first semester. After the first month of teaching activities, the surveyed students made assessments regarding the difficulty of the curriculum for the first semester:

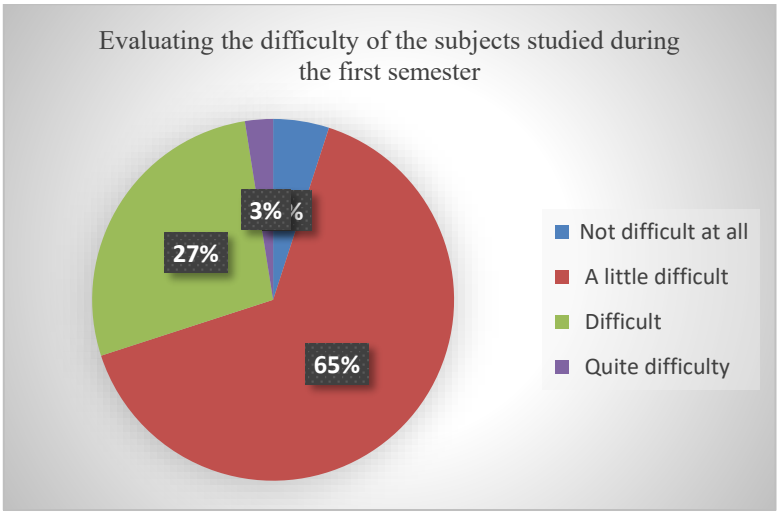

Figure 4. Evaluating the diffculty of the subjects studied during the first semester

The learning difficulties they faced during the first month of school are related to the teachers' language (25.64%), taking notes (17.94%), understanding the timetable (15.40%), finding the lecture/ seminar rooms (25.64%) and understanding the requirements (15.38%).

The students' opinions regarding the transition from school to student life, after the first month of academic activity, make it necessary to identify the ways in which the process of adapting first-year students to the specifics of academic life can be accelerated, in accordance with their specific particularities. The first-year experience has been and still is an important issue in higher education research.

The successful integration of first-year students must take place on the personal, social level as well as on the academic one, as it is very likely that adjustment difficulties in one of the three areas will have an impact on the other area. Social integration and academic performance have been identified as strong predictors of dropping out, as has satisfaction with university life (McKenzie & Schweitzer, 2001; Rickinson & Rutherford, 1995). Information about young people's experiences and perceptions of their first year of tertiary education is therefore of great importance to investigations of school leaving and the development of lifelong learning. Given that the costs of college education and reorientation to another field

of study or institution for students can be high, it is important to identify the factors that shape the first-year experience.

4. Conclusions

In order to support the transition from high school to university education in recent years, the ROSE project was carried out in Romania - Component 2 Interventions at the level of universities in the public education system, with competitive grant schemes that financed:

a) "summer bridge" type programs on campus that included activities such as: university-level summer courses for high school students, to give them an early university experience; high school-university-labor market partnerships, to promote the benefits of tertiary education and professional insertion; the development of tutoring programs on campus, managed and coordinated by universities, for high school students, tutoring being provided by academic staff and/ or final year students.

b) creating, developing and ensuring the initial operation of learning centers/ laboratories in universities, with the aim of increasing the degree of keeping in the university the students at risk, through the development of specific skills, and the provision of academic support services , aligned with the students' needs.

The activities that have been carried out through such interventions should be continued and supported by universities to facilitate the transition of young people from high school to university.

We propose key ways to help young people during the transition from high school to university:

Orientation Programs: organizing orientation programs to familiarize students with the campus, academic resources, and available support services. This will help them feel more comfortable and connected to their new educational setting.

Academic Advising: Providing academic advising to help students understand the requirements and expectations of their chosen program. Providing guidance on course selection, degree planning, and strategies for success in higher education.

Study Skills Workshops: conducting workshops and seminars on study skills, time management, note taking techniques and effective exam preparation. These sessions will help students develop the skills needed to excel academically in college or university.

Peer Mentoring: establishing a peer mentoring program where experienced students can provide guidance and support to upcoming students. This can help foster a sense of community and provide a safe space for new students to ask questions and seek advice.

Transition courses: considering offering transition courses designed specifically for new students to help them adjust to the academic rigor and expectations of higher education. These courses may cover topics such as critical thinking, research skills, and academic writing.

Support Services: promote and inform students about the various support services available on campus, such as tutoring centers, writing centers, career

httpservices, and counseling services, encouraging students to use these resources as needed.

Networking Opportunities: organizing networking events or social activities where students can connect with the professors, the university staff, and other students. Building social connections can help students feel more engaged and supported during their transition.

Clear Communication: maintaining open and clear communication with the students, providing them with information about important deadlines, policy changes, and academic opportunities. Using various communication channels such as email, online platforms and face-to-face meetings to ensure students stay informed.

By implementing these strategies, we can help facilitate a smooth transition for students from secondary to higher education, supporting their academic success and overall well-being.

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STRATEGIES FOR MANAGING NEGATIVE EMOTIONS IN SCHOOL*

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Abstract

Emotions are part of our life and have the extraordinary quality of giving it color. These complex states of feeling generate a series of psychological and physical changes in the individual capable of influencing his thinking and behavior. Sometimes the intensity with which he feels them is so strong that the individual can be driven to take actions that, under normal conditions, he would not have done.

Starting from these realities, the present study aims to create, both, an inventory of the negative emotions students currently face in school, as well as an updated inventory of the strategies they use to manage them.

243 high school students participated in our exploratory research, based on the questionnaire, the resulting conclusions highlighting, in addition to the two inventories, the fact that beyond positive or negative emotions, it is more important to understand that any individual, and in particular the student is, in fact, subjectively confronted with stabilizing or destabilizing emotions, the strategies for their efficient management taking on extremely personal forms.

Key words: *Positive/negative emotions; Stabilizing emotions; Emotion Management strategies.*

1. What can we understand by "emotions"?

Explaining the concept of "emotion" is an extremely popular approach. Many authors have had this theme among their research concerns and the results of their studies have given the subject both notoriety and more clarity (Ekman & Davidson, 1994; Dixon, 2003; Blackman, 2009; Fehr & Russell, 1984; Fox, 2008; Ionescu, Jacquet, Lhote, 2002; Gaulin & McBurney, 2003).

Therefore, we do not intend to contribute significant new elements in the field, limiting ourselves to presenting only a few points of view, relevant in the context of the present investigative-statistical research.

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DEX defines emotion as "...an affective reaction of medium intensity and of relatively short duration, often accompanied by changes in the body's activities, reflecting the individual's attitude towards reality..." (*Dicționar explicativ al limbii române*, 2016, p. 312). According to the Oxford Dictionary, emotion is "a strong feeling arising from circumstances, mood or relationships with others" (Oxford Dictionary, 2019). In another approach, emotions are described as subjective experiences resulting from the agreement or discrepancy between a person's needs or expectations and reality (Băban, 2011).

Nicolae Sfetcu gives us an excellent review of the meanings and evolution of the modern concept of emotion. We thus learn that in research, the modern understanding of the notion of "emotion" denotes passion, feeling and affection (Dixon, 2003), unlike what was explained before the 1830s.

Emotions can therefore be seen as events or dispositions of variable, polar durations, placed on two continuous axes, from negative to positive valences, respectively from low intensity to increased intensity and in relation to which individuals have subjective, particular responses. Elaine Fox tells us that these responses can take the form of verbal, physiological, behavioral and/or neural mechanisms (Fox, 2008).

Emotion is in a permanent interdependence with the mood, temperament, personality, disposition and motivation of the person concerned (Sfetcu, 2020).

Most of the time, emotions are responses to significant internal and external events and result in a series of physical and psychological changes likely to influence behavior (Schacter, Gilbert, Wegner, 2011). Other authors have demonstrated that emotions are frequently the driving force of motivations (Gaulin & McBurney, 2003), facilitating adaptation to the environment, being the result of evolution (Ekman, 1992).

In terms of their social impact, emotions enable communication in a community, with positive or negative ethical charge (Fielding, 2015).

We therefore understand that emotions are closely related to the subjectivity of feelings, physiological responses or behavioral expressiveness.

Thus, at the basis of feeling emotions can be found factors that take into account the physical changes that occur, but also the method of interpretation of individuals in relation to them, following the production of the emotional event. We are talking about two essential elements: physical excitement and a cognitive label.

It also highlights the fact that emotions also have effects in our body, not just on a psychic level, as we would initially expect. Regardless of the type of emotion or its intensity, its effects are also noticeable at the biological level in the human body.

2. Types of emotions in educational context

Specialized literature abounds in classifications of emotions, starting from various criteria and from extremely varied perspectives (Ekman, 1992; Plutchik, 2001; Parrot, 2001).

We retain the typology offered by Alina Blagoi that tells us about the two established criteria for classifying emotions, polarity and functionality.

According to their polarity, emotions are divided into positive and negative. Positive emotions occur when there is motivational congruence, that is, when concrete events are consistent with the person's goals. Complementarily, negative emotions appear when the concrete situation is in contradiction with the individual's goals, blocking them or making it difficult to reach them.

According to their functionality, emotions are divided into functional and dysfunctional. The functionality or dysfunctionality of an emotion is established according to its behavioral consequences related to the person's goals (Blăgoi, 2014).

Interesting for our study regarding the management of negative emotions in school is a classification offered by the Human-Machine Interaction Network on Emotion, taken from the Romanian literature by Marian Rujoiu (Rujoiu, 2015). In the respective research, 48 emotions were identified, divided into several categories, as follows:

Table 1. An inventory of positive and negative emotions

POSITIVE				
Positive and lively	***Positive thoughts***	***Positive and soothing***	***Care***	***Reactants***
Amusement	Courage	Calm	Affect	Interest
Delight	The hope	Thank	Empathy	Politeness
Euphoria	Pride	Relaxation	Friendliness	Surprise
Excitement	Satisfaction	Relief	Love	
Happiness	Trust	Serenity		
Joy				
Pleasure				

NEGATIVE				
Negative thoughts	***Negatives outside the control area***	***Negative and strong***	***Negative and passive***	***Agitation***
Doubt	Anxiety	Anger	Boredom	Stress
Envy	Embarrassment	sorrow	Despair	Shock
Frustration	Fear	Contempt	Disappointment	Tension
Guilt	helplessness	Disgust	Suffering	
Shame	Helplessness	Irritation	Sadness	
	Concern			

As the previously mentioned approaches have shown, both positive and negative emotions can, in turn, be divided into functional and dysfunctional emotions (Blăgoi, 2014).

3. Methodology

3.1. Objectives

Starting from all these theoretical considerations, to concretize our investigative approach we chose to focus on two objectives:

1. updating the inventory of negative emotions that students experience in the educational context they go through during their pre-university education;
2. updating the inventory of methods that they use in managing these negative emotions that they try.

Subsequently, we aimed to offer to all those interested in knowing the emotional spectrum with negative valences experienced by students in a school context, two inventories, with the necessary nuances and explanations (of emotions and associated management methods), which start exclusively from the perceptions subjective of the study participants in relation to the topics investigated in the research.

It should also be stated that no value judgments were considered regarding the efficiency or correctness of the ways of managing the negative emotions identified in the surveyed subjects.

3.2. Participants

A group of 243 students (138 boys and 105 girls) from the University of Craiova, in their first year of study at different faculties, aged between 18 and 22, participated in the research.

Being first-year students, we considered that the answers they gave to the questions asked can be attributed to students from the pre-university system, taking into account the minimal differences in age and level of training.

3.3. Instruments and procedure

The research was of an exploratory type, the investigative-statistical approach based on a questionnaire that contained only two questions.

Step 1

Specifically, at the beginning of the research, the 243 students were presented with the previously presented list of negative emotions (Rujoiu, 2015), and the meanings of the concepts associated with each emotion were explained to them.

This was done to ensure that each subject participating in the study would accurately indicate the emotion they felt, regardless of their level of intelligence and emotional development.

Step 2

Once this step was completed, the subjects were asked to answer the following questions:

1. *What negative emotions have they felt over time in the classroom?*
2. *How did they deal with them?*

Step 3

All these lists containing negative emotions were collected, centralized, those with similar meanings were brought together and only the first 20, whose frequency of occurrence was the highest, were retained in a single list. The negative emotions thus mentioned were collated, the redundant, non-serious or banal ones being eliminated.

Step 4

Students were asked to rank these emotions in order of frequency of occurrence. The resulting lists (containing the 20 emotions ranked according to

individual opinions) were brought together and, depending on the frequencies indicated and the positions occupied in the hierarchies of each student's options, were integrated into a final list, hierarchically organized, of the negative emotions felt currently in school by students (Table 2).

Table 2. A hierarchy of negative emotions felt in the classroom

Rank	Negative emotion	Short description
1	*Boredom*	state of mind that occurs in the face of a lack of distraction or stimuli
2	*"I do not like!"*	sensation produced as a result of an outcome that was not expected or desired
3	*Disappointment*	feeling of disappointment. It occurs in a situation where things are not going the way the person expected
4	*Discouragement*	feeling that occurs in association with disappointment and frustration and that reflects the inability to identify a solution to the felt negative situation
5	*Stress*	state of tension and an alarm reaction of the body
6	*Frustration*	inability to satisfy a goal or desire
7	*Anxiety*	state of restlessness, involving high physical and mental arousal
8	*Concern*	state of heightened concern about a problem or situation
9	*Irritation*	acute feeling of annoyance, temporary outburst of anger
10	*Shame*	discomfort due to an action in which the person felt humiliated or because of the fear of being ridiculed or that someone else will
11	*Anguish*	state of mind involving restlessness, arising as a result of worry or distress
12	*Soul pressure*	feeling that involves an emotional charge that produces fatigue
13	*Sadness*	feeling of emotional pain, caused by a trigger and involving pessimistic, vulnerable and tearful thoughts
14	*Guilt*	feeling of responsibility regarding an event or action, of a negative nature
15	*Desperation*	arises from the loss of patience, when what the person is facing is considered irreparable or due to the impotence of being able to overcome it successfully
16	*Anger*	specific feeling that tends to accompany the expression of this anger: shouting, sudden actions, violent behavior, etc.
17	*Resentment*	hostility towards someone, because of a previous unpleasant situation with that person that could hurt or offend you
18	*Indignation*	anger against a person or action to be considered unjust
19	*Fear*	anxiety due to the perception of danger
20	*Disgust*	feeling of antipathy related to something or someone, which produces rejection

Similarly, following the same steps, it was also done in terms of obtaining the list of strategies that the students used to manage the negative emotions felt (Table 3).

Table 3. A hierarchy of strategies used by students to manage negative emotions felt in the classroom

Rank	Description of the method
1	Postponing/avoiding dealing with activities/people that are perceived as sources of negative emotions (procrastination)
2	Excessive consumption of food, alcohol, tobacco or drugs
3	Mental inactivity: playing sports, watching movies, social media abuse, sleep
4	Reveria – withdrawal into an imaginary world
5	Excessive spending of sums of money
6	Turning to other unimportant/non-priority activities to forget the negative emotion/state felt
7	Adopting a hostile/mean/aggressive attitude and behavior towards others
8	Understanding the causes behind the emotions felt and trying to eliminate them
9	Isolation from group and peers
10	Gambling and sports betting
11	The lie/omission
12	Directing unfair/unjust/incorrect accusations at others
13	Excessive criticism
14	Victimization

4. Results and discussion

The concept of "emotion" is similar to that of "time", we know what emotion is, but if we are asked, we cannot find the words to formulate an answer.

Although a multitude of authors have formulated definitions and launched explanations necessary for its understanding, the concept continues to wear particular, individual meanings.

Emotions are in reality our relationship to external factors that determine our certain thoughts. They form the basis of our typology and highlight how we respond to named factors.

Every thought we have, in turn, determines an emotion, because they work together, the intensity of which can be variable, and this ultimately determines a new reaction at the biological level in the body. It is noteworthy, in terms of controlling emotions, that only 10% is related to an event, while 90% is our ability to react positively or negatively.

The classifications of emotions are multiple, ranging from basic elements to elements that are part of more complex structures. The ways of interpreting their cataloging, even if they are vast, are based on a few essential elements and refer to two singular categories: positivity vs. negativity, respectively functionality vs. dysfunctionality.

Moreover, it goes without saying that the feeling of emotion is a deeply subjective phenomenon, the same event being emotional for one person, while for another it is neutral. For someone, receiving a red rose generates a positive emotion,

while for another individual this event reminds of the loss of a loved one and takes on a negative affective tone.

Seligman mentioned that "emotions determine the quality of our lives. We manifest them at work, in communication with friends, in our contacts with relatives and in our relationship with ourselves, in everything that is really important to us. Emotions can save our lives, but they can also cause us strong negative emotional experiences" (Seligman, 2002).

However, the conclusions we could draw by analyzing the results of the present study are interesting.

4.1. About the negative emotions felt in school

1. Point out that the dominant negative emotion in school is boredom. This, associated with those on places 2-4, allows us to draw the conclusion that the inability to create challenging educational contexts, likely to arouse students' interest, sometimes corroborated with the lack of involvement of the teaching staff in building a modern lecture/lesson framework, generates a destructive set of negative emotions with a destructive impact regarding the student's reporting to the class/school;

2. At the same time, since the student realizes that what is happening is not right, he often feels stress, accompanied by the frustration that he cannot do anything to change the state of affairs in the classroom, all these feelings being part of the development and the manifestation of various forms of anxiety;

3. This possible reality is completed by the particular events felt in extremely subjective ways and experienced distinctly by each student present in the school environment, where we can find the anxiety felt when he did not prepare his homework, the despair that he could not follow a new schedule of training/preparation, anger at being rejected by a colleague, sadness when experiencing a breakup, or upset that a colleague did not complete their assignment for a project.

4.2. About the methods of managing negative emotions used by students

When dealing with methods of managing negative emotions, we can easily draw a parallel, based on similarity, with the inventory of psychological defense mechanisms. Seen from this perspective, the inventory presented by Crașovan Dănuț Ioan is comprehensive and enlightening (Crașovan, 2020; 2021).

Methods of managing negative emotions can be divided into two broad categories: ineffective methods and effective methods. The ineffective ones are mostly aimed at managing the moment, experiencing and reacting, while the effective ones aim to solve the problem, remove the cause of negative emotion.

From this perspective, an analysis of the list of strategies used by students, and especially of their hierarchy, is extremely interesting and leads us to revealing conclusions.

a) Of the 14 strategies identified, 13 fall into the category of ineffective strategies;

b) The first 7 strategies, in order of the frequency of their appearance/use, are from the category of ineffective strategies;

c) Only the eighth strategy is the one that leads us to an approach based on rationality, understanding the problem and finding a solution to solve/manage the negative emotions felt over a long period of time;

d) A number of strategies used by students are of concern, such as: Exaggerated consumption of food, alcohol, tobacco or drugs or Gambling and sports betting, methods that reflect at least a mediocre level of education in terms of managing emotions negative.

"Negative emotions are a normal, healthy and helpful part of life. These emotions are not a sign of weakness or low emotional intelligence. Trying to hide negative emotions can lead to additional emotional pain. No emotion is without purpose. We need to explore and understand more about the purpose behind each emotion" (Zivac, n.d.).

Detecting the signals of inefficient management of emotions, especially those mentioned before, is essential, because for every problem identified at the level of a person, its solution comes with a multitude of benefits that attract fruitful development, well-established interpersonal relationships, the development of coping strategies teamwork or educational benefits.

When the wrong or less correct approaches are known, they can be modified, adopting attitudes that really help to identify the problems, finally bringing an amalgam of solutions from which the best can be selected for application, or can select various depending on the applicability they have, the person or group of people they are used, the social environment and not only and a lot of other factors that stood to a degree, be it greater or less at the basis of the appearance of these problems.

Managing negative emotions is a highly individual matter. Unfortunately, no one teaches us, during middle school, what are the healthy ways to report the problems we face, how to think, and how to distinguish between effective and ineffective methods of managing emotions. In today's school, all this approach is, unfortunately, an initiatory route for each student, and the evolution and emotional health of the young person later depends on the more correct way and the less correct one discovered by each.

Providing the adolescent with effective emotion management strategies early on, teaching him how to properly relate to reality and how to rationally process the events you experience is the solution for an emotionally healthy future society.

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SCHOOL ORIENTATIONS IN THE POST-PANDEMIC ERA*

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Abstract

March 11, 2020 was the day when in Romania the pandemic moved school classes online. Nobody had the slightest idea that we were facing an entirely new situation. An invisible enemy (Covid-19) started to spread fear, changed rules and behaviors. Most of us gave up natural gestures, changed our way of working, vacations were different or didn't take place at all, in short, we adapted to a different lifestyle. The school and the children were struck by the pandemic in a very particular way. Schools closed and no one knew what was coming, because no one was prepared for something like that. The consequences were unsuspected, for the students, parents and teachers alike: they all found themselves in an unpredicted situation. The shock was strong.

The Romanian education system had to adapt along the way, to enter, for the beginning, in the virtual, online or hybrid meeting. The communication difficulties, at least at the beginning, were very high. Even now, the shortages of the pandemic period are being felt. But, despite all these, the school had to go forward, to function. The directions of action were and are multiple, involving various scenarios. Although even today this enemy has not disappeared, teachers, parents, students and education specialists continue to find plausible scenarios for the good functioning of the school and society.

Key words: *Covid-19; Pandemic; Virtual era; Online school; Post-pandemic scenarios.*

1. Introduction

The COVID-19 pandemic has had an unprecedented impact on all levels of education and learning around the world. At the beginning of March 2020, the closure of schools in approximately 194 countries (including Romania) affected more than 1.6 billion students at preschool, primary, secondary, high school and

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university levels, representing 90% of all students included in the education system. It refers to closing schools through physical presence in the classroom. This face-to-face kind of presence has been replaced by presence in the virtual environment, on various educational platforms.

The countries that resorted to online learning alternatives have achieved varying degrees of success according to their capabilities. UNESCO published a set of specific recommendations intended for several countries, to plan and implement distance education, but it is hard to imagine that even the richest of them would follow them all (Guţu, 2021).

The COVID pandemic caught the state system completely unprepared. The private one reacted and adapted more quickly to the new challenges to move to online education. The more cumbersome state system, with great inertia to change, initially preferred to stop classes and then asked teachers to teach online. Without national protocols and solutions, some teachers struggled to teach classes online, others sent out worksheets, but many enjoyed an unexpected holiday. In the period prior to the Easter holiday, the ad hoc organization of distance education almost entirely (91% of the responses) involved the use of applications for sending written messages or images (for example – WhatsApp), direct telephone conversations between teachers and students, different sites with educational content (Petrescu, 2020).

2. Consequences of the pandemic, in terms of education

Petrescu (2020), citing other bibliographic and webographic sources, also identifies some problems that students, teachers and parents were faced with during the pandemic period:

a) There were no protocols. Teachers could choose whether or not to hold classes, and this highly permissive approach did not encourage work. Teachers are paid, they should teach classes and do the work they are paid to do. In some cases, in the absence of other means, their work consisted only of sending out worksheets and checking them. In other situations, most did not hold classes anymore, the program was reduced to a minimum, in some cases: 1-2 classes in the primary level.

b) Teacher training and the platforms used. Many teachers had never taught online before, they didn't know (and still don't know) how to use an online platform.

c) The infrastructure was and still is a major problem. Many teachers have access to the Internet and a smart phone that can allow them a basic level of interaction with the students. The problem that some have raised is related to the lack of the means of work - not all teachers have a laptop to help them do their lessons.

Similarly, not all children have access to tablets and laptops, and the phone is not a solution. There are families with 2-3 children who do not have the opportunity to provide the children with an environment that is favourable to learning.

d) Connectivity. Going beyond the problems of organizing classes, there are techy problems related to Internet access. According to the European DESI index (Digital Economy and Society Index), Romania ranks 22 out of 28 in terms of internet connectivity (https://ec.europa.eu/digital-single-market/en/news/digital-economy-and-

society-index-desi-2019); 45% of households are connected to the Internet, but they are predominantly in urban areas. The RO-NET program for connecting rural areas to the Internet is far from being completed and anyway it is planned to cover only 35% of what is needed (https://www.comunicatii.gov.ro/proiecte-in-implementare/proiectul-ro-net, online, 15.11.2023/)

e) Ensuring an environment favourable to learning. The European Commission's Eurostat report pointed out that in 2017, the majority of the population in each EU member state lived in privately owned housing, between 51.4% in Germany and 96.8% in Romania. Also in 2017, over 15% of the EU population lived in overcrowded houses; the highest rate among the member states was registered in Romania: 47.0%.(https://ec.europa.eu/eurostat/statistics-explained/index.php?titl-e=Housing_statistics/ro, online, 16.11.2023).

Taking into account the fact that the evolution of real estate markets has not undergone major changes during the last 2-3 years, the figures are relatively current. The reality confirmed by the statistics is the following: compared to other European citizens, Romanians live in smaller and more crowded homes. Under these conditions, providing a room so that a child will not be disturbed during the online learning process is just a dream (wishful thinking). It is possible for more than one child to study in a room, but in this case, the necessary means will have to be provided: noise cancelling headphones, although they do not completely reduce the noise. However, if both children are asked to answer at the same time, if there are teachers who do not accept that the students keep their microphones closed, other problems can arise (the ambient noises will be heard by the teacher and classmates).

f) The decrease in human interaction between a teacher and a student as well as between students. Hidden behind a screen, reduced to the size of a square on the monitor, participants in an online lesson cannot perceive the body language, the inflections of voices, or the appreciative smile of a classmate. All these small elements are actually essential in communication, in developing an open relationship based on trust. There are studies that demonstrate that the lack of these nonverbal elements in communication increases the feeling of fatigue, the so-called zoomfatigue (Fosslien, Duffy, 2020, https://hbr.org/2020/04/how-to-combat-zoom-fatigue, online, 15.11.2023).

It is harder to keep the attention of children/ students because they are distracted by other elements and because it is much harder to intervene when they do not understand something. Classic lectures and explanations that last more than 10 minutes in the online environment tire students. If in face-to-face discussions, a teacher can "teach" for half an hour without losing the students' interest and attention, things are different online, and the students feel disconnected. The solution is the adaptation of the teaching techniques to online education, although even the use of the most modern methods does not rise to the level of classical education that involved face-to-face interaction (https://www.edweek.org/ew/articles/2-020/03/23/how-effective-is-online-learning-what-the.html, online, 15.11.2023)

g) Subjective evaluation. Evaluations can be subjective if a "one to one" evaluation method is applied: teacher - student. If in classical education, classmates

could witness a subjective evaluation, in the situation where the evaluation is done in a teacher-student format on a separate channel from the other children, the chances of the subjective evaluation being discovered and "charged" decrease drastically. And a parent, even if he attends the evaluation, not having time to compare with other students/ pupils, cannot draw a relevant conclusion.

h) Conducting exams. The future of a child is also influenced by the college he completes. The absence of a college entrance exam, the use of baccalaureate and high school grades as a tie-breaking criterion make children and their parents pay special attention to these grades. The problem is that in the absence of a transparent grading system, grades can differ greatly depending on the school, the class, or even depending on the teacher's affinities.

3. Advantages (yet) of online learning

Beyond the criticisms and shortcomings of online learning, there are also many advantages that we partially try to mention (Smărăndel, 2020).

Online learning can be defined as an alternative form of education during which the continuation of the educational process is ensured under normal conditions or self-isolation, bad weather, etc., through various IT tools for distance communication.

First of all, in order to be as effective as face-to-face training, it must be found in the form of blended learning (blended learning – online and face-to-face). The presence of each of these types of interaction, when meaningfully integrated, increases the learning outcomes.

Secondly, quality online learning means: time to plan, prepare and develop a lesson, the current situation rather forcing us to act with the minimal available resources and in a reduced time.

The careful planning of online learning involves not only the identification of the content to be covered, but also the careful design of the types of interaction, in order to support the learning process. Then, it must be adapted to the age and even the individual characteristics of the students, lending itself better to the older ages, the high school level, the students and adults in training contexts.

Looking at how learning is made more efficient by using the internet, we can also list some advantages (Smărăndel, 2020):

- **The rapid distribution of the teaching materials:** teachers or administrators can transmit the information they want very quickly, anytime, anywhere and to anyone. Thus, there is no longer a need to synchronize people to meet physically; nobody will lose anything because the information stays online.
- **The pupils/ students can get possession of the materials by simply accessing them:** anyone in the target group has access to all information, anywhere and anytime.
- **The existence of multimedia content: i**mages, videos, files and any kind of virtual materials which have always made learning more efficient, can also be transmitted through the Internet.

- **Contents can be deleted, corrected or updated easily:** if the distributor realizes that he has submitted wrong information or perhaps wants to update it, he/ she can do so anywhere and at any time. Also, any document can be edited and re-edited, so correction no longer causes difficulties.
- **The service used by one or more people, creating groups:** the information can be directed to one person or to several at the same time individually or groups can be created where users can communicate with one other.
- **The use of interactive contents, the existence of feed-back:** as groups exist, members can exchange experiences, opinions or information. They can also receive real-time, even quick feed-back from the group administrator or peers. Thus, there is also virtual interaction and not only individual learning (Smărăndel, 2020).

4. Online learning/ education directions of action, during the post-pandemic period

Solutions can also be identified for the recovery and resilience of education during the post-pandemic period (Guţu, 2021). Schools need resources to rebuild the learning loss once they reopen. How these resources are used, and how to target children who have been particularly affected, is an open question (Sievertsen, Burgess, 2020).

As a result, the decision and investments related to solutions for the recovery of education in the post-pandemic period must be guided by the following actions, such as:

- The risk-based approach meant to maximize the educational, developmental, and health benefits for students, teachers, staff and the general public and to help prevent a new outbreak of COVID-19 in the community;
- The need to reach the right, contextualized balance between supporting effective student learning on the one hand and ensuring the health, hygiene and safety of students, staff and the general public on the other;
- Focusing efforts on building a future-proof education system that involves a system that is not only more robust and better equipped to deal with potential new crises, but also more flexible and agile, thus offering a wider range of alternative ways and technologies of learning for all students, so that studies take place in safe environments with appropriate support for their learning and well-being;
- Making efforts to overcome large gaps (including the digital field) and intense focus on flexibility, equity and inclusion, while strengthening, at the same time, the capacities of risk management and implementation of innovative solutions (https://s9.ro/1fw3).

Given that the future of the pandemic is difficult to predict, all institutions recognize the need to develop action strategies for the various scenarios we could face in the next academic year.

Although the accelerated digitization that we have witnessed in recent months was the result of an unforeseen event, we can use this opportunity to identify the best and most innovative pedagogical practices emerging in online education to create a pole of expertise regarding digital solutions suitable for distance learning. As the technological challenge is properly addressed, our attention turns to the pedagogical challenges and the perspectives of testing evocative pedagogies on the occasion of participating in this great educational experiment because "The way the school looks today, that's how the country will look tomorrow" (Spiru Haret).

The pandemic has caused the most destructive disruption of education in history. It is therefore vital that the school continues with physical presence and without interruption. To keep schools open and safe, WHO, UNICEF and UNESCO have adopted a set of eight recommendations, formulated by experts from the Technical Advisory Group (TAG) for the WHO European Region, on schooling during the COVID-19 pandemic (https://www.unicef.org/romania/ro/cum-va-ar%C4%83ta-%C3%AEntoarcerea-la-%C8%99coal%C4%83-%C3%AEn-timpul-pandemiei-de-covid-19):

- Schools must be among the last institutions to close and among the first to reopen.
- The implementation of a testing strategy.
- Ensuring effective risk reduction measures.
- Protecting the mental and social well-being of children.
- Protecting the most vulnerable and marginalized children.
- Improving the school environment.
- The involvement of children and adolescents in decision-making.
- The implementation of a vaccination strategy that allows children to continue school.

Regarding the pandemic and post-pandemic psycho-emotional health we can keep in mind and learn: (https://www.unicef.org/romania/ro/pove%C8%99ti/cum-pot-adolescen%C8%9Bii-s%C4%83-%C3%AE%C8%99i-protejeze-s%C4%83n%C4%83tatea-mintal%C4%83-%C3%AEn-timpul-pandemiei-de-coronavirus, online, 15.11.2023):

a) Accept that anxiety (pandemic and post-pandemic) is absolutely normal

If closing schools and alarmist headlines can cause anxiety, we must know that this is a normal reaction of the body to the crisis. Psychologists have long accepted that anxiety is a normal and healthy function that alerts us to danger and helps us take protective measures.

Even though anxiety about COVID-19 is completely understandable, we must be careful to use reliable sources (such as the websites of UNICEF and the World Health Organization) to inform ourselves or to verify any information we get from less credible channels. Let's not forget that if we have symptoms, the illnesses caused by the infection with COVID-19 are generally, relatively mild, especially in children

and young adults. It is also important to know that many of the symptoms of COVID-19 can be treated.

b) Diversify our activities

Psychologists know that when we find ourselves in long-term difficult situations, it is good to divide the problems into two categories: those we can do something about and those we can't do anything about.

In present conditions, many things fall into the second category, but there is one measure that helps us cope with the situation: occupying our time with various activities. As possible ways, we can relax and create balance in our daily lives, doing our homework, watching a favorite movie or reading a book before bed, etc., activities that lead us to a state of relaxation, a state of well-being.

c) Find new ways to keep in touch with friends

To communicate and spend time with friends while maintaining social distance, social networks are excellent communication channels. Unlimited access to screens and social networks is an advantage, but it must be used with caution: too much of it harms, spoils things.

d) Do things for ourselves

For example, read a book, a journal, interact with students in extracurricular situations, interact with parents, water flowers, etc.

e) Give free rein to feelings

It is terribly frustrating to miss events with friends, hobbies or matches. These are significant losses. For teenagers, they are rightfully very upsetting, but there is also an emotional compensation that face-to-face meetings imply: we can be more open and we can say aspects that are difficult to mention face-to-face.

f) Be kind to ourselves and to others

Some teenagers (pre- and post-teens) were subjected to bullying and abuse at school because of the coronavirus. The reaction of witnesses to the abuse is the best way to sanction any form of bullying. Let's remember that now, more than ever, we need to be careful not to share or post things that can hurt others.

5. Results of an ascertaining research

Following a confirmatory research on a sample of 153 students (The Faculty of Letters and Physical Education and Sport, 2nd year, bachelor's degree) we have identified some important aspects from the pandemic and post-pandemic period. We are presenting, selectively, some of the students' answers (questionnaire-based survey).

Question 1: What do you mean by online learning during the pandemic?

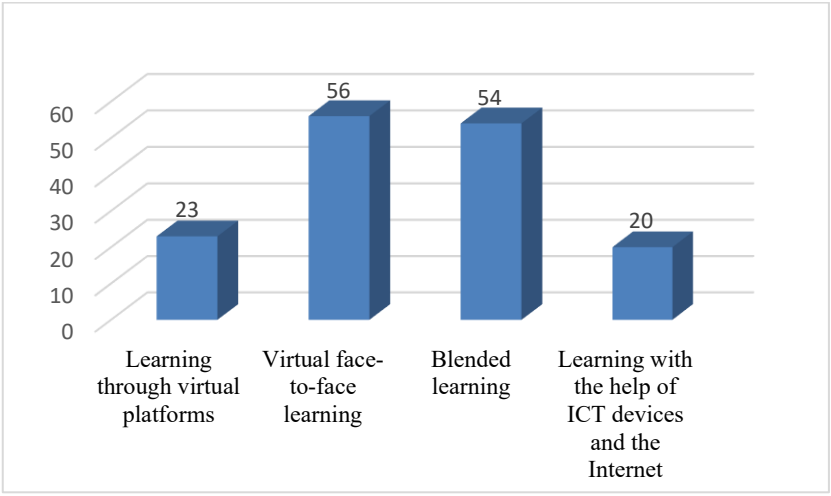

Figure 1. What do you mean by online learning during the pandemic?

Conclusion: The majority of respondents, through online learning, understand face to face learning in the virtual environment and blended learning.

Question 2. What difficulties have you encountered?

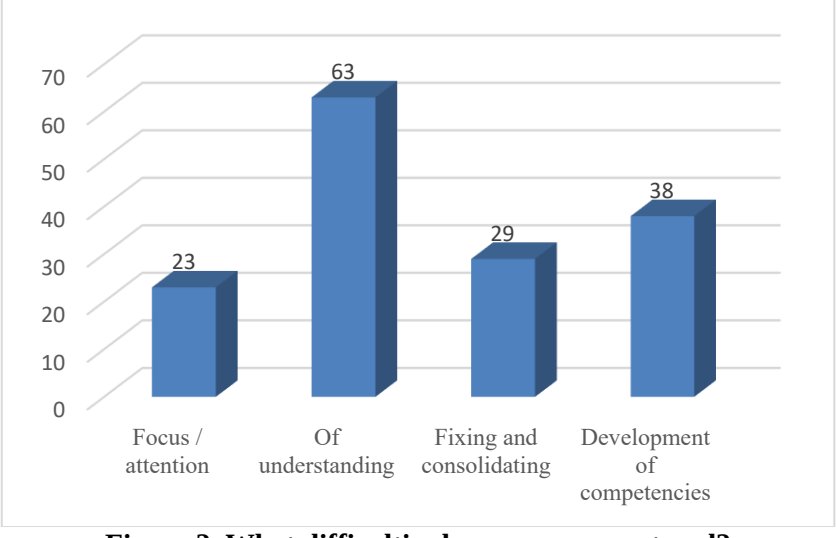

Figure 2. What difficulties have you encountered?

Conclusion: The main shortcomings are those of understanding and those of training and development of competencies

Question 3. What were the advantages during the pandemic?

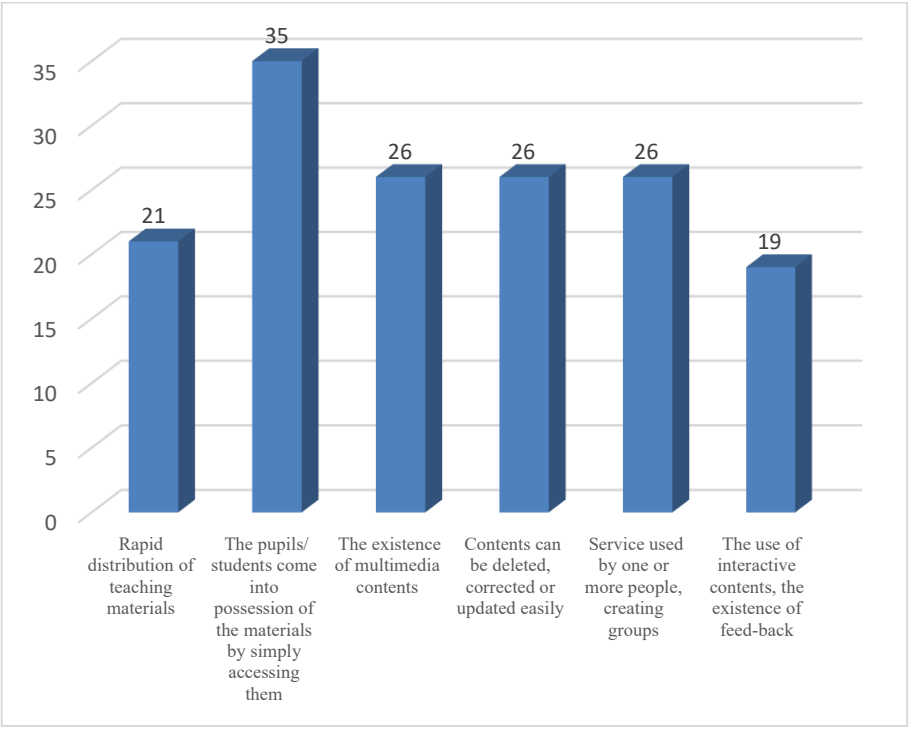

Figure 3. What were the advantages during the pandemic?

Conclusion: The answers were balanced, with most students preferring to receive the materials by simply accessing them.

Question 4. What solutions do you think should have been adopted?

a) Schools must be among the last institutions to close and among the first to reopen
b) The implementation of a testing strategy
c) Ensuring effective risk reduction measures.
d) Protecting the mental and social well-being of children
e) Protecting the most vulnerable and marginalized children
f) Improving the school environment
g) The involvement of children and adolescents in decision-making
h) The implementation of a vaccination strategy that allows children to continue school.

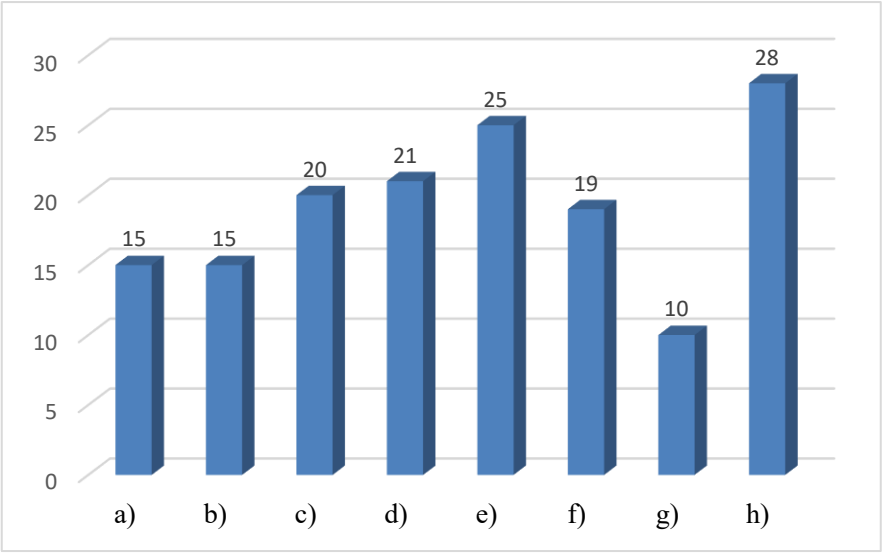

Figure 4. What solutions do you think should have been adopted?

Conclusion: The responses were balanced, with most students preferring to find a vaccination strategy that would allow face-to-face classes to continue.

Question 5. How was the teaching done?

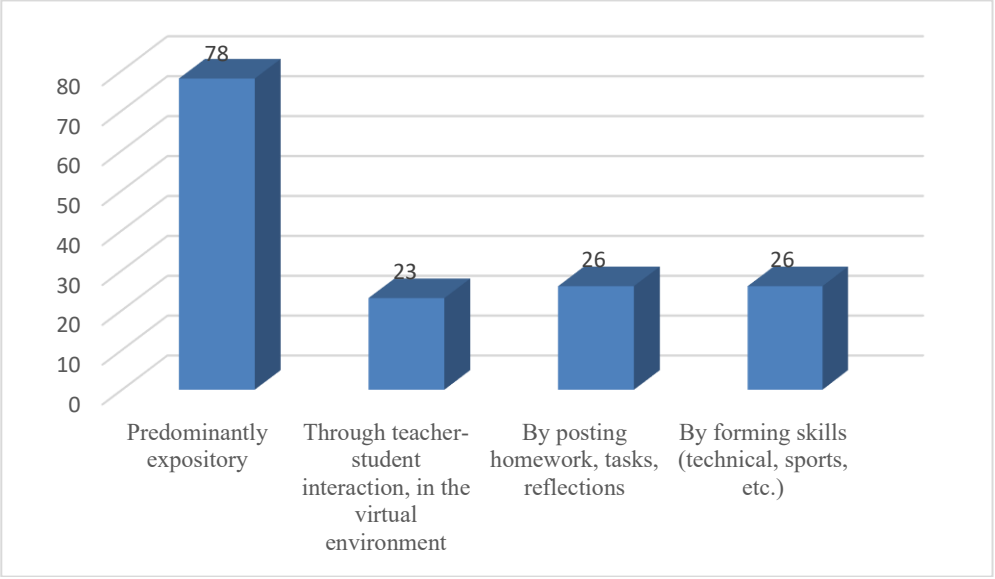

Figure 5. How was the teaching done?

Conclusion: 78 surveyed students appreciated that the way/ style of teaching was predominantly expository (with an emphasis on informative values).

Question 6. What was the quality of the learning?

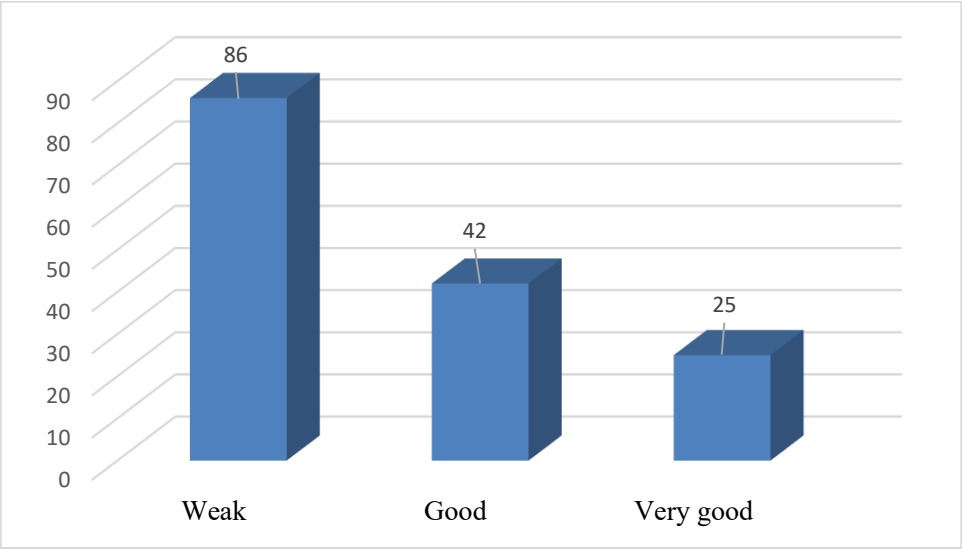

Figure 6. What was the quality of the learning?

Conclusion: most of the respondents considered that learning was poor during the pandemic.

Question 7. How was the assessment carried out?

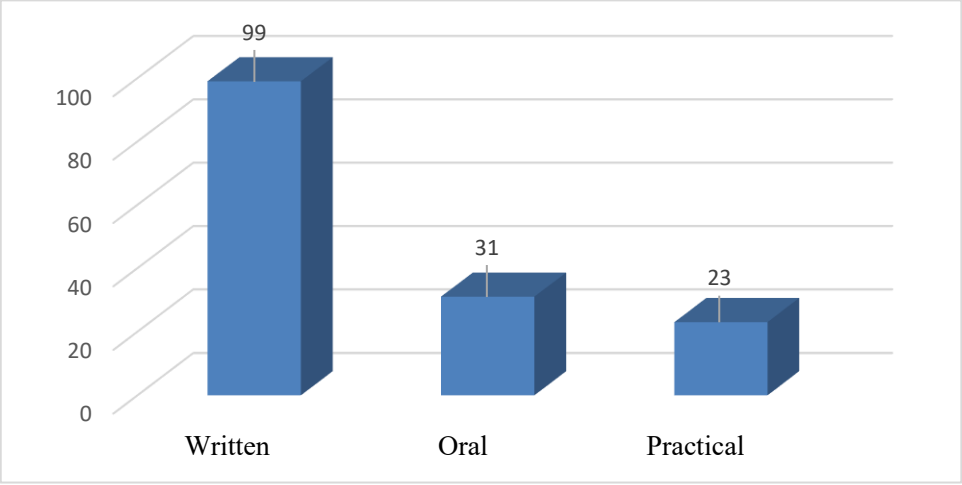

Figure 7. How was the assessment carried out?

Conclusion: The evaluation took place in the classic manner, i.e. "written", with various variants.

Question 8. How long do you think the effects of the pandemic will be felt?

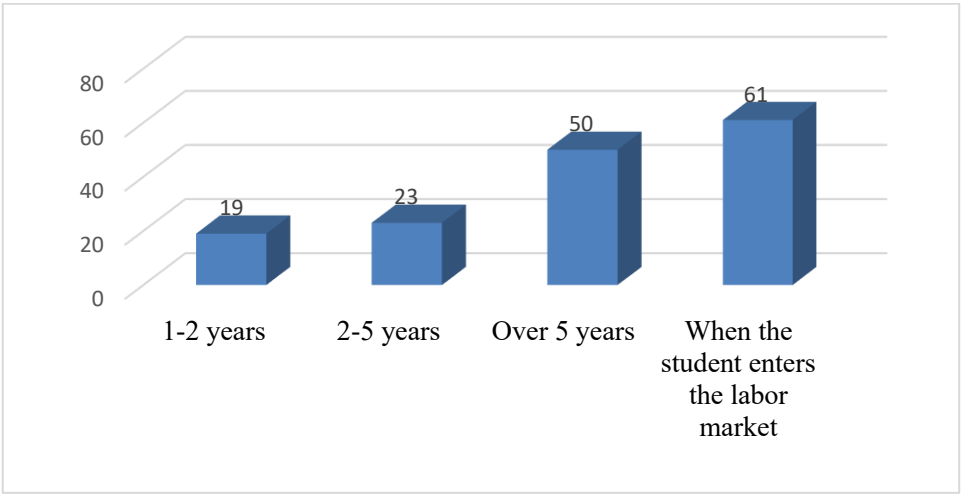

Figure 8. How long do you think the effects of the pandemic will be felt?

Conclusion: The students (most of them) surveyed believe that the effects of the pandemic will be felt when they enter the labor market.

Following the application of the questionnaire, the data processing and the intervention premises, we consider it appropriate to present some objectives, in the short, medium and long term, for recovery and resilience in the educational field.

In the short term:

- Decisions regarding student progress and examinations;
- Modification of school calendars;
- Supporting parents in planning and integrating education at home;

In the medium term:

- Assessment of educational gaps;
- Adaptation of the school curricula;
- Development of online educational environments and mixed educational approaches;
- Professional development and support of teachers and school staff;
- Educational support programs for students;
- Recommendations for schools regarding recovery and assessment practices;
- Managing the workload of the teaching staff.
- Mobilization of education experts to create orientation and training packages for teachers;
- Providing IT devices and internet access for the most marginalized students.

In the long term:

- Integrating socio-emotional skills into the curriculum, pre-study practices, as well as school planning and school ethos;
- Addressing the digital divide;
- The transformation of pedagogical practices, including the use of mixed education;
- Assessing the impact of school closings, in 2020, on education (disaggregated data).

6. Conclusions

The impact of the Covid-19 pandemic on education tends to affect not only learning, but also other social aspects such as mental health, violence or pronounced social inequalities.

The response from the government, civil society and development partners has been prompt and decisive, but there are still gaps and challenges that need to be addressed. Distance learning experiences have so far provided valuable lessons, including the importance of quickly adapting the education system to the changing realities. Traditional education must not only be adapted and reformed, but this reforming process must embrace opportunities for innovation and thus become more open to meet the current demands of children, young people, including those from vulnerable groups, and members of the society at large. The pandemic situation can turn into an opportunity to rethink the curricula, the teaching-learning-evaluation processes and the development of student skills in order to strengthen their online learning skills and support their motivation.

According to some international data, despite global efforts to support the recovery of the education systems, they still face major disruptions and obstacles. There should be an emphasis on maintaining continuity of education as a priority for world governments.

A tangible solution would be for the responsible authorities to focus on the recovery of education systems, addressing the urgent need to reduce school dropout rates and manage learning losses, as well as be oriented in four directions:

- Generating a response to the disruptions in educational processes caused by closing schools;
- Inclusive scaling of distance learning systems, connecting all students and all educational institutions to the Internet.
- Effective management of the recovery and modernization of logistics infrastructure in schools;
- Data collection, knowledge distribution in order to increase the resilience of education systems;
- Elaboration of a long-term action strategy focused on the recovery of national education, facilitating access to studies mainly for students from socially vulnerable families, also with health problems. The interventions at the national level must be based on the introduction of new initiatives to support educational

institutions in the recovery stage, focusing specifically on three important areas: providing support to children through the educational system, managing learning losses and accelerating digital education.

Another solution to the recovery of the educational field after the pandemic is a reform of the teacher training and evaluation system, from a psycho-pedagogical module to all degree levels, the elimination of bureaucracy through the digitization of schools and the provision of tools and software so that we can have a classroom management with a high-performance digital system, which would also mean improving the educational process.

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RECONSIDERATION OF LEARNING THEORIES FROM THE PERSPECTIVE OF THEIR APPROACH IN THE VIRTUAL ENVIRONMENT*

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10.52846/AUCPP.2023.2suppl.14

Abstract

The attempt of the scientists to understand and explain/describe the mechanisms of human learning has been an ongoing and important concern with implications in various fields of endeavor. Thus, the variety of learning theories that are objectified in learning models or styles is explained.

In the present study, we analyze the most important psychological theories of learning, viewed from the perspective of an environment that is increasingly present in people's lives, when we talk about learning - the virtual environment. A reassessment of these theories is important, because although they are well-known, they have an explanatory power, facilitating learning in the online environment, with the mention of correctly capturing the pedagogical/educational demands of designing such an activity.

On a practical-applicative level, we have carried out pedagogical micro-research of a constative type, following the attitude of teachers towards learning carried out in virtual environments, the challenges that the act of designing entails, psycho-pedagogical demands of learning in the virtual environment. The questionnaire applied to more than 100 teachers in pre-university education captures their needs regarding the organization of the training space in the virtual environment.

So, the ubiquity of learning is a modern characteristic of instruction and education, it remains for teachers to identify solutions for achievement, adaptation to situations and contexts as different as possible, as well as revaluing the psychological theories of learning from the perspective of technological learning environments.

***Key words**: Theories of learning; Models of learning; Learning style; E-learning; M-learning.*

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1. Introduction

The literature records numerous researches/studies regarding the examination of how learning is achieved. Living things learn, and more often than not, differently. Behavior/conduct, emotions, mental actions or how society intervenes in the learning action are just four of the essential conditions from which theories start and develop.

But what is a theory of learning?

To understand the phrase *learning theory*, R. Iucu (2008) conceptually defines three notions:

- **Paradigm**, which he explains either from the normative-axiological perspective, referring to Th.S. Kuhn, either from an instrumental perspective, citing Borovin; in both situations, the paradigm seeks to explain, interpret an aspect of reality (educational phenomenon), in a certain period, it being known that articulations, reorganizations, changes, evolutions are conditioned by cultural, psychosocial aspects, but grounded by the same scientific truth through -a larger community of specialists; "is a global interpretation parameter of a reality" (Iucu, 2008, p. 59).
- **The theory** is that which regulates the relationship between scientific phenomena, having explanatory but also predictive value; "it is an ideal and abstract explanation of a scientific phenomenon" (Iucu, 2008, p. 59).
- **The model** is the link between theory and practice, a construction of a reality, having a certain purpose;
- **Learning style** - the authors of the Praxisological Dictionary of Pedagogy, quoting Schmeck (1988, apud Bocoș, coord., 2019, p. 402), consider that the learning style represents "a cognitive, affective and psychological modality, through which the people who achieve the learning perceive, interact and respond to the challenges of my life, in a certain way of processing and organizing information".

Having become a current reality, as a result of the development of information technologies and their implementation in didactic activities, in teaching and learning, the latter, carried out both in a formal, but also non-formal and informal environment, e-learning represents "the totality of educational situations in which the means of information and communication technology are used, as support for teaching, learning, evaluation or as a means of communication" (Albulescu, 2021, p. 21).

M-learning refers to "Mobile learning is the capability to attain or provide educational content on individual pocket devices such as PDAs, smartphones and mobile phones" (Kumar, Vasimalairaja, 2019, p. 97). In Mobile learning, contents are accessible to anyone, anytime and anywhere (Bocoș, coord., 2018).

According to Bocoș (coord., 2019, p. 476), learning theories represent "theories that try to describe, explain and conceptualize the conditions and process of learning".

With evidence of evolution over time and bringing a different and enriched perspective on the realization of the learning activity, learning theories know permanent adaptations, in accordance not only with the evolution of science, but also with changing social realities. In an era dominated by the use of communication and

information technologies, these theories need to be re-analyzed, in order to be able to identify the points of intersection with what is, for the current generations, learning.

2. The revaluation of learning theories in the virtual learning environment

These theories of learning presented above are added to others equally established or less known, with the specification that " *there is not a single theory of learning that is complete and serves explanations (...); there are certainly several theories of learning, based on which we can approach the substance of a behavior under the scope of the concept of learning" (Neacșu, 1999).*

So, learning theories have value:

- informative, as it presents scientifically validated information;
- explanatory, in that they describe a mechanism by which learning occurs;
- normative, because they are closely related to educational practice, being a foundation for answering questions such as: "how to teach to generate easy learning?", "how to assess to stimulate learning?" or "how to learn to ensure efficiency and effectiveness of the work involved or the desired results?"

Their importance is reflected both at the level of theory and at the level of pedagogical practice, being the ones that lead to the outline of some psycho-pedagogical models of learning, to the establishment of didactic principles, those that govern the instructive-educational activity, to the elaboration of the instructional design by reference to the paradigms imposed or required by social evolution, as well as by the desirable profile of contemporary man, etc.

Knowing and applying a theory has effects down to the smallest levels of educational design.

In the context of blended learning, the need to reorganize the design approach developed by the teacher from the perspective of learning theories is all the more necessary, in order to capture their advantages and limits, the relevance of some at the expense of others, as well as the pursuit of some psycho-pedagogical requirements of their application. Blended learning is a form by which forms of online education (asynchronous and synchronous) are combined with offline and/or on-site education, both ways of delivering learning being intensely affected by the evolution of information technology.

We summarize, in table 1, the psycho-pedagogical requirements of reporting to learning theories, carried out in a virtual context.

Table 1. Psychopedagogical requirements of the application of learning theories in the virtual environment

Theories of learning	Psychopedagogical requirements
Behaviorist theories - follow human behaviors as a result of learning; -direct training (Engelmann), programmed training (Skinner) and social learning (Bandura), etc.	-Teachers must formulate the learning outcomes in "visible" and "measurable" terms and communicate them to the students, in order to provide them with benchmarks of the learning activity, as well as the possibility of authentic self-evaluation

	- online tests or other forms of assessment can be used to ensure feed-back; - the study material must be presented structured, by units, having scientific accuracy, didactic logic, methodical; the presentation must be made diversified: auditory, lyrical, educational film, tutorial , etc.
Cognitive theories - their interest is related to the way information is processed, through mental mechanisms	- the volume of the presentation, the rhythm or sequence of the information, the color, the graphics, the size of the font, the way of presentation (audio, video, animation, etc.) lead to the formation of perceptions, which will influence the way of transforming/processing/cognitive processing of the information - it is recommended to use schemes, conceptual graphs, mental maps - the use of some strategies to realize the transfer from the virtual environment to real life: applications, analyses, syntheses, evaluations - providing individualized support to each student in the virtual environment according to the specific learning style; applying the principles of the theory of multiple intelligences -stimulating students to use metacognitive skills
Constructivist theories -social interactions, the discovery, the interpretation of reality by each person lead to learning, claim the followers of this theory; - the student re-builds the universe of knowledge, through involvement in activities;	- teachers create an active learning environment for students -in the online environment, information can be provided to students, who will process it for the first time without help; thus, everyone personalizes their knowledge, by reference to existing anchor knowledge - learning in small groups, pairs, collaborative, interactive is indicated - the teacher must create moments of reflection on what has been learned, but also enough exercises, application topics, which give students the opportunity to integrate the new not only in the old knowledge structures, but also in cognitive schemes - the teacher must provide as many examples as possible, non-examples to ensure the desired meaning and significance of the learning - methods are used to stimulate critical thinking, creativity, etc.

In essence, the products of mixed learning will be the desired ones when a wide range of learning theories is used, adapted to the specifics of each didactic sequence, making the role of the teacher responsible in their choice, by adapting

them according to the existing circumstances. Moreover, there are theories that emphasize that, with the emergence and development of virtual learning communities, the teacher's role will be secondary, but not negligible.

E-learning developers suggest that the increasing influence of the Internet and people's online communication will significantly affect educational practice. The rapid development of technology, the manifold increase in the use of the Internet and the improvement of mobile technologies will create a variety of new educational structures and organizations. And at the center of the learning activity will be the student, not a teacher and an institution.

Connectivity theory highlights two important points that contribute to the explanation of learning activity: the ability to search for current information and the ability to filter secondary and unnecessary information. Learning is considered a process of knowledge creation and not just knowledge consumption. Students can connect to knowledge networks in many areas. Peripheral areas of knowledge are porous, which allows the creation of interdisciplinary connections. Siemens (2008) claims that the ability to see the connection between fields, ideas and concepts is the core skill.

Siemens says that learning is a network, and networks are not only made up of digital environments and are not solely based on neurological mechanisms.

In addition, hybrid learning is much more attractive to digital native students, extremely accustomed to text-messages, with the sound-word connection, with a discontinuous but intense way of knowing reality, establishing other kinds of connections, configurations, using- and intense multitasking skills. Ciprian Ceobanu (2016) illustrates the fact that the generation of those who learned in logical and reasoned progression is facing a great challenge: that of educating a generation that can use two or more devices at the same time. This reality will have to be the premise of new educational paradigms.

3. Research design

The purpose of the research is to identify effective ways of organizing the learning space in the virtual environment, by reconsidering the design of didactic activities.

In close connection with the mentioned purpose, the research objectives aim to:

O1: *Knowing the teachers' opinion regarding the general aspects of the implementation of a curriculum adapted for the virtual environment (e.g. efficiency, challenges, elaboration of curriculum documents, etc.);*

O2: *Identifying the advantages and limits of learning in the virtual environment;*

O3: *Highlighting effective teaching-learning strategies in the activities carried out in a blended-learning context.*

The research hypotheses and variables

The investigation aimed at establishing the truth value of the following hypotheses:

H.1: *Knowing the teachers' opinion regarding curriculum adaptation in the context of learning in a virtual environment will allow the identification of concrete training methods, effective for this context.*

H.2: *The identification of teaching-learning-evaluation strategies in the activities carried out in a blended-learning context with different categories of students will ensure the increase of their school results.*

The variables that can be derived from the previously formulated hypotheses are:

- Independent variables: knowledge of the teachers' opinion regarding the curricular adaptation in the virtual environment; identification of teaching-learning strategies in the activities carried out in a blended-learning context with different categories of students
- Dependent variables: effective concrete ways for the virtual environment; increasing the school results of students.

The sample of subjects was made up of 100 teachers from pre-university education, who come from the pedagogical practice base of the "Ștefan Odobleja" National College, Drobeta-Turnu Severin. Through the legal way of establishing the bases of pedagogical practice (rural/urban, center/outskirts, theoretical/ vacation/ technical schools, early education/secondary/high school, special schools/hospital, etc.), we consider that the sample ensures representativeness, because it investigates the opinion of teachers from different school environments, with different specializations, seniority and teaching degrees.

The research method used was the survey based on the questionnaire, the corresponding tool, the opinion questionnaire, being administered through Google forms. It included 10 items of different types (with multiple answers, one with an open answer or items that required assigning numerical values to the offered options).

4. Results and Discussion

Next, we present the significant results, obtained following the application of the research tool, intended to help validate the research hypotheses.

One of the items of the applied questionnaire sought to know the subjects' opinion regarding the effectiveness of learning in the virtual environment (graph no. 1).

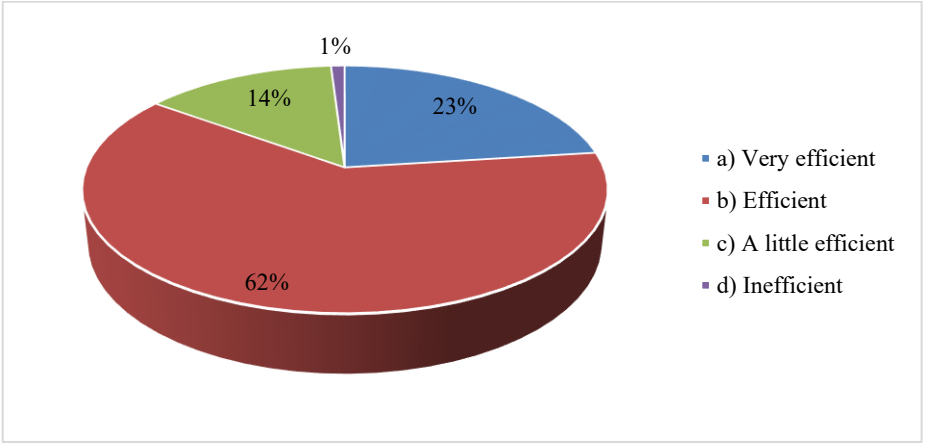

Figure 1. Effectiveness of learning in the virtual environment

As can be seen from figure 1, more than half of the respondents believe that it is effective, only 23% being of the opinion that it is very effective.

Another item of the questionnaire sought to capture the difficulties encountered in adapting the curriculum to the virtual environment. From the centralization of the answers, it appears that the biggest challenge for teachers is the need to identify relevant digital educational resources for the different categories of students, from the need to achieve a differentiated, student-centered instruction. We mention that, for this item, teachers had the opportunity to choose several answer options, the options of the subjects being presented in figure no. 2.

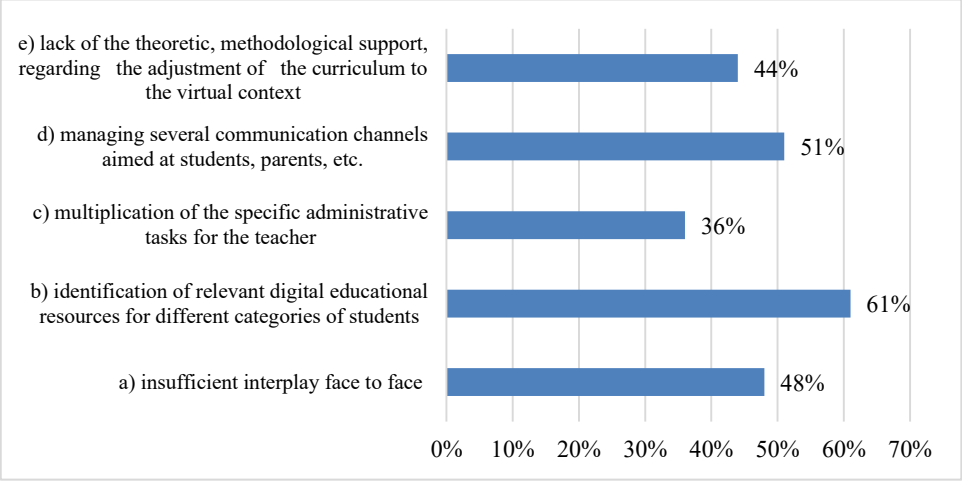

Figure 2. Challenges in adapting the curriculum to the virtual environment

According to chart no. 2, the biggest challenges for teachers were related to the need to identify relevant digital resources for the different categories of students they work with, but also the difficulty of managing several communication channels at the same time, to maintain contact not only with students, but also with their parents or colleagues.

The activity carried out in a virtual context also implies the adaptation of the didactic methodology to the new training situations. Graph no. 3 presents the teachers' answers regarding their choice for certain categories of methods, which they adapted to the virtual environment. And this item allowed the choice of more response options.

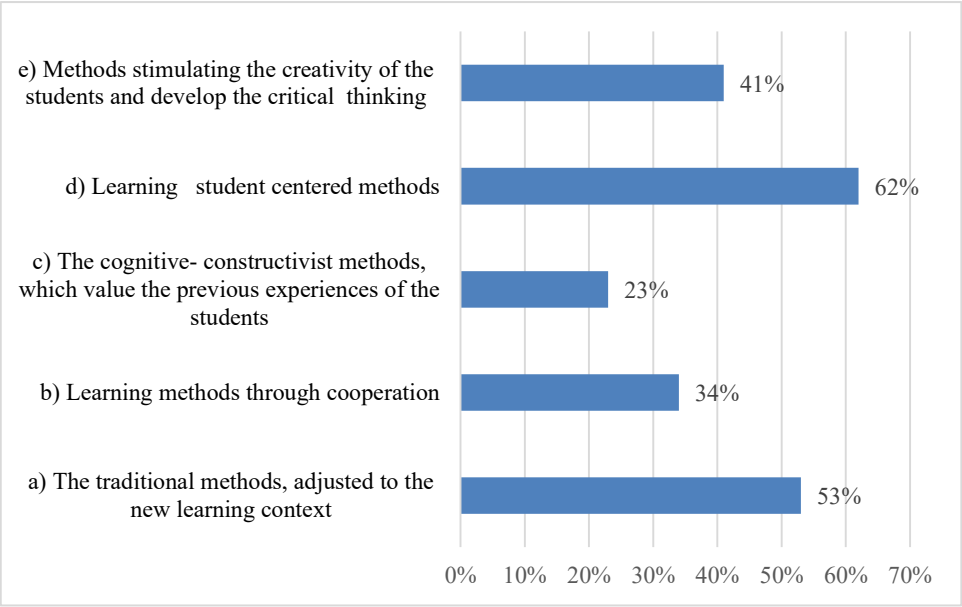

Figure 3. Subjects' opinion regarding the categories of methods used in the virtual context

Most of the subjects stated that they use student-centered methods, but also traditional methods, adapted to the new context.

For activities carried out in the virtual environment, teachers believe that the best way to work with students is mixed organization, as can be seen from figure 4.

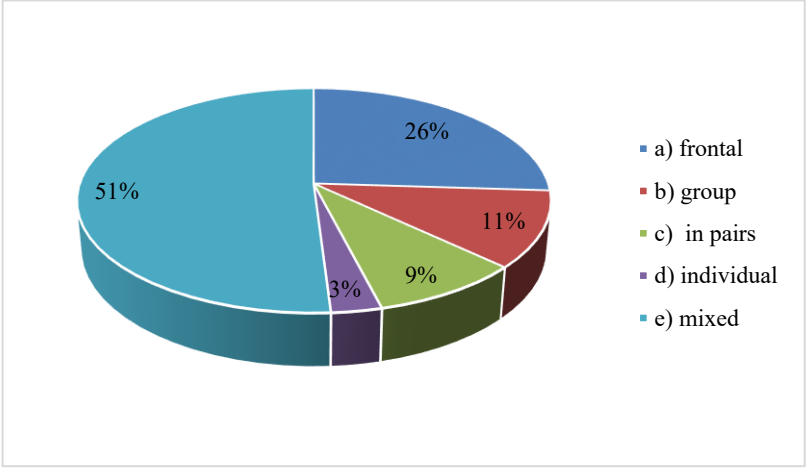

Figure 4. Subjects' opinion on the preferred form of organization for online activities

Another aspect pursued in the investigation carried out by us was the one related to the organization of the assessment in a virtual context. Two of the items of the

questionnaire requested the expression of the opinion regarding the relevance of the evaluation in a virtual context (see the responses of the respondents presented in figure 5), respectively the evaluation methods considered to be suitable for online activities (figure 6). The last mentioned item allowed the choice of several answer options.

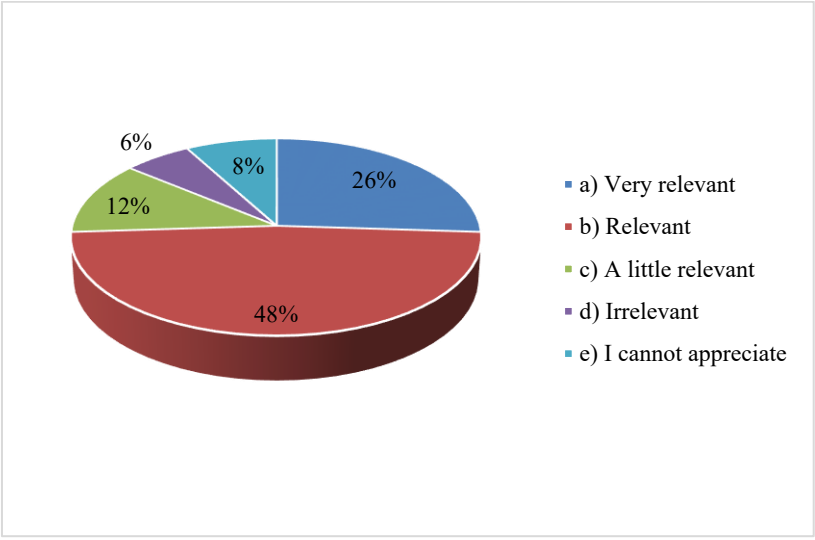

Figure 5. Teachers' answers regarding the relevance of the assessment carried out in a virtual context

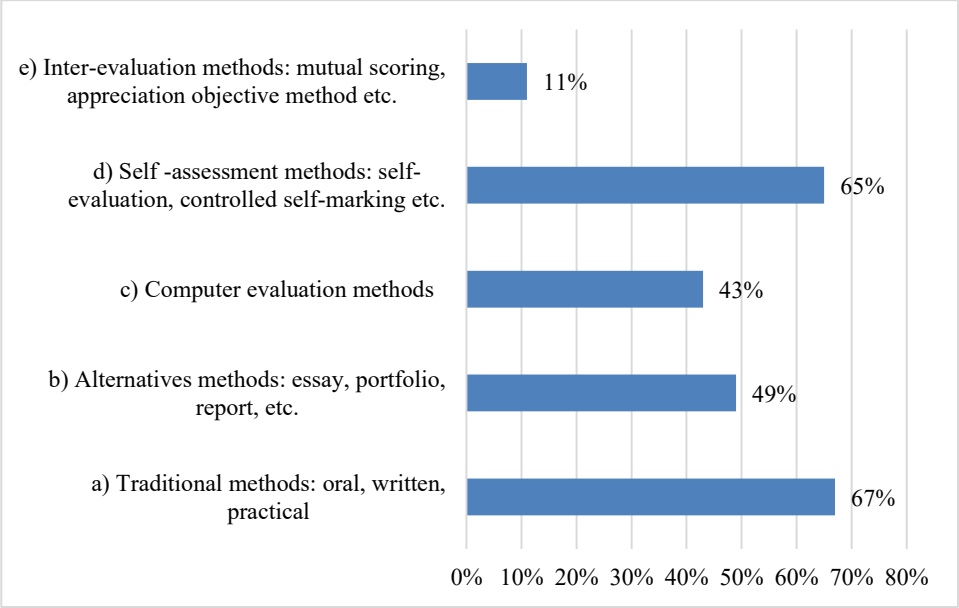

Figure 6. Teachers' answers regarding the assessment methods used in the virtual context

The most used assessment methods remain, also in the blended-learning context, the traditional ones, followed by self-marking and alternative assessment methods.

5. Conclusions

The results of our investigation highlight the special openness of teachers for the organization of teaching - learning - assessment in a virtual context, as well as the experience and ability to reflect on the work done. In the context of the numerous changes produced in recent years, flexibility and creativity are two essential attributes of teachers, necessary to achieve a differentiated training, to adapt the contents and methodologies on the one hand, at the level of each category of student and each one separately, and, on the other hand, to the new didactic contexts, which combine and combine direct and virtual interaction.

Although they recognize the difficulty of adapting to the new realities, teachers are aware of the need for change, in the sense of finding the best ways to integrate new technologies into the didactic activity. As in the case of direct, face-to-face activity, in the virtual environment there are no "recipes", templates, patterns regarding the ways of working. It is up to each individual teacher to best know and understand the situations they face in order to make the best decisions regarding curriculum design, adaptation, implementation and evaluation.

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LEARNING EFFECTIVELY IN THE REAL AND VIRTUAL CLASSROOM*

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Abstract

The present study aims to draw attention to a possible systemic model of academic learning. The objectives pursued were:

a) investigating the opinion of students-future teachers regarding the academic learning process;

b) building and applying an experimental program focused on the development of academic learning competence;

c) conducting an opinion poll regarding the role of the experimental Program.

The experimental program designed and applied, based on a holistic approach to learning, had in mind the following directions: a) motivational-attitudinal support; b) action at the cognitive and metacognitive level; c) practicing the skills and affirming the desirable behavior, more precisely, putting the students in a situation. The research undertaken allowed us to collect data that we then subjected to quantitative and qualitative analysis. Following the results obtained, we were able to formulate directions regarding the development of students' competence to learn effectively.

Key words: *Competence; Cognition; Metacognition; Attitude, Motivation.*

1. Introduction

The initial professionalization of teaching staff must be carried out from the perspective of training and practicing the essential skills and roles for an effective teacher, who must be able to manage all instructional-educational, managerial situations in the class of students.

The students-future teachers must affirm and develop a series of cognitive, affective-motivational capacities and personality traits that will allow them to carry

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out effective teaching activities, to fulfill their proposed objectives and to have very good results.

To become a professional in any field, even more so in the field of education, the student needs to learn to learn. The competence to learn to learn is one of the eight key European competences.

The competence to learn to learn refers to the ability to get involved and persevere in learning, to organize one's own learning, efficiently managing time and information, both individually and in a group. The competence to learn to learn includes the awareness of the process and individual learning needs, the identification of existing opportunities and the ability to overcome obstacles that may arise, in order to achieve successful learning.

"The key competencies specific to effective intellectual work at the academic level are defined and understood as packages of knowledge, skills, abilities and attitudes that students and graduates of higher education need to ensure their academic success, for personal development, for employment and further insertion on the labor market (Neacșu, 2006, p. 8)".

These key skills allow the graduate to adapt flexibly and quickly to any context or change.

The key competence status of the competence to learn to learn is based mainly on three considerations (Rychen, Salganik, 2003, pp. 66 – 67):

a) the ability to learn to learn is a highly valued result at the societal and individual levels, being associated with the ideas of "well-functioning society" and "successful life";

b) it is a tool that allows providing answers to the complex and important requirements of a wide spectrum of contexts;

c) it is an important competence for all individuals.

2. Academic learning competence - characteristics, structure

The definitions given to the term competence in the psychopedagogical literature are numerous and not exactly clarifying; most of these definitions do not specify the differences between this concept and others that are part of the same notional sphere (for example ability, capacity) or replace the term competence with that of capacity and vice versa (Mogonea, 2014).

The more extensive definitions given to the term competence have in mind an integrated set of knowledge, abilities, attitudes practiced in different situations, which involves the mobilization of internal and external resources and adaptation to the context of concrete and authentic experience.

Among the characteristics of competence can be mentioned (Ștefan, 2014, p. 21):

- it is integrative: competence implies the integrated use of knowledge, skills, abilities, various attitudes;
- represents the result, the end of the training cycle: a competence requires training time;

- refers to an implementation context; a competence is certified when applying (combined) different knowledge, skills, attitudes that a person has at a given time, in a specific context;
- is a construction or reconstruction system; it develops and can be lost if it is not mobilized for a long time.

In the psycho-pedagogical literature, some authors (Neacșu, 2010), approach learning specific to the university environment/academic study as a processual activity, progressive gradient, carried out by human actors, with an individual rhythm in a defined social-value environment, through the conscious mediation of of educational efforts to achieve some goals - cognitive, psychomotor, affective-emotional and motivational-educational results having characteristics of reversibility, (re)construction and improvement.

Studies (Baker *et al.,* 2019; Blayone *et al*., 2018; Du *et al.,* 2019) emphasize the importance of skills necessary to learn effectively: motivation, perceived usefulness, self-regulation, confidence, communication skills, critical thinking etc.

In summary, academic learning represents:

a) a directed and self-directed sociocultural and psychopedagogical project of intensive assimilation of what is planned in the curricular documents – study plan, curriculum, textbooks, support materials, etc. (Neacșu, 2014, pp. 548-549);

b) a system of systematic activities aimed at the assimilation of curricular values - competences (knowledge, skills, values, experiences, attitudes).

Table 1. The structure of academic learning competence

Knowledge	Skills and Capabilities	Attitudes
Knowing the stages included in the learning process	Planning and organizing the learning process	Initiative to learn, intrinsic motivation for learning
Knowing the resources involved in the learning process	Regarding the development of the learning process	Openness to new things, adaptability and flexibility
Knowing the factors that condition and optimize learning	Self-evaluation and valorization of learning results	Confidence in oneself, in the ability to be successful
Knowledge of effective learning methods	Metacogniţion	Autonomy, perseverance

All the components included in the table work integratedly, they give meaning to the competence only through their unitary action, if "it exists and manifests itself separately, it does not ensure the successful completion of the activity. That is why competence can be determined in concrete situations (Frăsineanu, 2012, p. 94).

Competences represent "the result of a long process, they are formed gradually, and the basis of their formation is the previous experience of the students, experience that must be updated within the didactic activities (Popescu, 2014, p. 55)".

We consider motivation and confidence to be crucial for learning competence, in the context of personal and professional self-development management.

More recent studies (Sung, 2016, pp. 252-275) highlight the effects of ICT integration on performance in the learning process. The context of digital devices enable learners to exploit information from online environments, record and act on the data needed to solve their learning problems. Integrating learning in diverse environments is recommended (Tan, 2007, pp. 253-269), and other studies (Sing, 2012, pp. 93-98) compare student achievement in a virtual environment with student achievement in a classroom environment face to face.

Academic learning, approached from the perspective of the skills paradigm, includes cognitive, metacognitive and emotional factors.

Cognitive strategies are a basic objective of the training and have in mind the planning of training sequences so that those who learn perfect this category of strategies (reception, encoding of verbal information, storage and retrieval). JW Rigney (apud Negovan, 2004) states that "the instructional system can be designed in such a way as to help pupils/students to become aware that they do, in fact, have cognitive strategies and thereby facilitate their subsequent use of these strategies" (Negovan, 2004).

Capitalizing on metacognition (Zhao, Wardeska, McGuire, Cook, 2014, pp. 48-54, Mogonea, 2014), of personal reflection (Mogonea and Ștefan, 2014) represents another condition for ensuring success in academic learning, for overcoming cognitive conflicts and socio-cognitive (Mogonea & Popescu, 2015).

Non-cognitive factors should not be neglected either, such as self-confidence or the emotions involved in the learning process.

The training and development of metacognition favors the awareness of one's own cognitive approach, of one's own chained actions during independent study, ensures the identification of one's own difficulties encountered and one's own mistakes made, allows the achievement of self-control, self-regulation of the activity undertaken by students.

Metacognition has a decisive role in the realization of self-monitoring of one's own knowledge-building activity, in the realization of self-evaluation and implicitly in the restructuring of the reaction to oneself, based on the recorded results.

3. Holistic approach to learning – an experimental program

3.1. Research objectives

Our research set out the following two objectives:

a) investigating the opinion of students-future teachers regarding the academic learning process;

b) building and applying an experimental program focused on the development of academic learning competence;

c) carrying out an opinion survey regarding the role of the experimental Program focused on the development of academic learning competence in the training of students-future professionals in the field of education.

3.2. The sample and methods of the investigation

The sample of our study included 68 students, from the Faculty of Law, who are in the third year of the pedagogical path of initial training (level I), from the Department for Teaching Staff Training, University of Craiova.

The methods used for data collection were the questionnaire-based survey, the focus-group interview.

The questionnaire, addressed to the 68 subjects, was made up of 11 items, both open and closed.

As a structure, the constructed questionnaire followed two dimensions:

a) the academic learning process, from the perspective of students-future teachers (items 3, 4, 5, 8, 11);

b) self-evaluation of the capacities involved in the (self)learning process, formed as a result of completing the Experiential Program (items 6, 7, 9, 10).

The first two items of the questionnaire had the role of "breaking the ice" between the subjects and the interviewer, to make the transition to the questions related to the academic learning process.

Items 3, 4, 5, 8 and 11 of the questionnaire asked the students to place their opinion on an abstract scale, marked with numerical values from 1 to 5, (the lexical meaning assigned to the items being "not at all", "to a very small extent ", "to a small extent", "to a large extent", "to a very large extent") or from 1 to 4 ("poor", "medium", "good", "very good"), against a series of aspects raised by the learning process: essence - awareness of the path taken in one's own academic learning process; the reasons why the student learns; the methods and techniques used in the individual study; the difficulties encountered, the strategies to overcome the obstacles; proposals of the students for the development effective academic learning skills.

The other 4 items investigated the subjects' opinion regarding the role of the experimental Program focused on the development of academic learning competence in the training of future education professionals.

In order to highlight the reserved attitude of the students towards the aspects mentioned above, as well as to avoid the appearance of non-answers, I considered it necessary to introduce two more steps in the scale: "I don't know/can't appreciate", "I don't answer".

Another method of gathering information that we used was the focus group, used with the aim of identifying the perception of the students who participated in the activities carried out within the experimental program.

The working tool used to conduct the focus group was the interview guide. In the interview guide, the questions were ordered logically, starting with more general questions and continuing with specific, detailed questions.

The interview guide consisted of 8 questions, as follows:

- an opening question, to create a relaxed, trusting atmosphere between the subjects and the interviewer;
- a transition question that has the role of directing the discussion towards the questions related to the creation of a "portrait" of the effective/inefficient teaching staff;

- five key questions regarding the activities in which they participated, within the experimental program, with an emphasis on the difficulties encountered, suggestions, proposals regarding the organization and further development of similar activities;
- a closing question designed to highlight aspects that were not captured by the previous questions.

3.3. Presentation of the experimetal program

Overcoming the stage where training aims to teach pupils/students cognitive strategies is evident in the fact that a series of programs have been developed to stimulate self-motivated learning, school (self)discipline, independent learning, assuming roles (Neacșu, 2006, p. 8).

One of the objectives pursued in our investigation, more precisely the second objective, was: the construction and application of an experimental program focused on the development of academic learning competence. We present this program in the following.

The complexity of competence being given by the coexistence of its components - knowledge, abilities, skills, attitudes, which aim to achieve performance in a certain activity, we have identified, within each component, a series of aspects that we consider essential in the development and affirmation students' competence for effective learning.

The experimental program designed and applied in the direction of the holistic approach to learning had the following directions in mind:

a) action at the level of non-cognitive factors;

b) action at the cognitive and metacognitive level.

Regarding the non-cognitive dimension, our approach focused on:

- Stimulation of intrinsic motivation;
- Developing an attitude of openness to new things, adaptability and flexibility;
- Positive influencing of convictions and beliefs about oneself, increasing self-confidence.

Action at the (meta)cognitive level focused on the following objectives:

- Listening attentively to the courses;
- Organized note-taking;
- Active involvement in the didactic activity (identifying key words from a text; formulating questions; outlining some hypotheses; synthesizing main ideas; developing cognitive maps; reflecting on the learning process, etc.);
- Processing and schematizing notes;
- Additional documentation;
- Creating and applying a learning plan (self-direction);
- Elaboration, by the subjects in the sample, throughout the experimental program, of personal reflections.

3.4. Data analysis, processing and interpretation

To achieve the first objective pursued - the investigation of the opinion of students-future teachers regarding the academic learning process, we built and applied a questionnaire.

The first aspect pursued (item 3) was the identification of the subjects' perception of learning. We found that most of the sample subjects changed their perception of the learning process, in the sense that 68% of the students understood that learning is not reduced to memorization, but is a process that involves going through several steps: reception - appropriation, linking - storage in memory, fixation correction, updating/conscious reproduction - application, transfer, innovation.

The subjects also admitted during the focus-group interview, that at the beginning of the experimental program they were not aware of the path taken in their own academic learning process.

Regarding the reasons why the student studies (item 4), the data recorded after the applied questionnaire showed that 51% of the student subjects study to have a successful career.

Table 2. The reasons why the student learns

The reasons why the student learns	Percentage
a) for his/her own professional training/successful career	23%
b) for his/her own personal development	21%
c) for grades	20%
d) for the attractiveness of the discipline/field	18%
e) the teacher's teaching style	18 %

Among the methods and techniques of individual study (item 5), students mention: a) reading notes (28%); b) consulting bibliographic recommendations (15%); e) creating summaries/plans of ideas (12%); f) development of schemes (5%); g) surfing the Internet (22%); h) carrying out tasks/applicative works (18%). Below we present the mentioned answers (table 3, figure 1):

Table 3. Methods and techniques for individual study

Methods and techniques for individual study	Percentage
a) reading the notes, materials presented/posted by the teacher	21%
b) elaboration of summaries/plans of ideas	19%
c) carrying out tasks/applicative works	19%
d) drawing up schemes	16%
e) self-initiated search for additional information/browsing on the Internet	15%
f) consulting bibliographic recommendations	10%

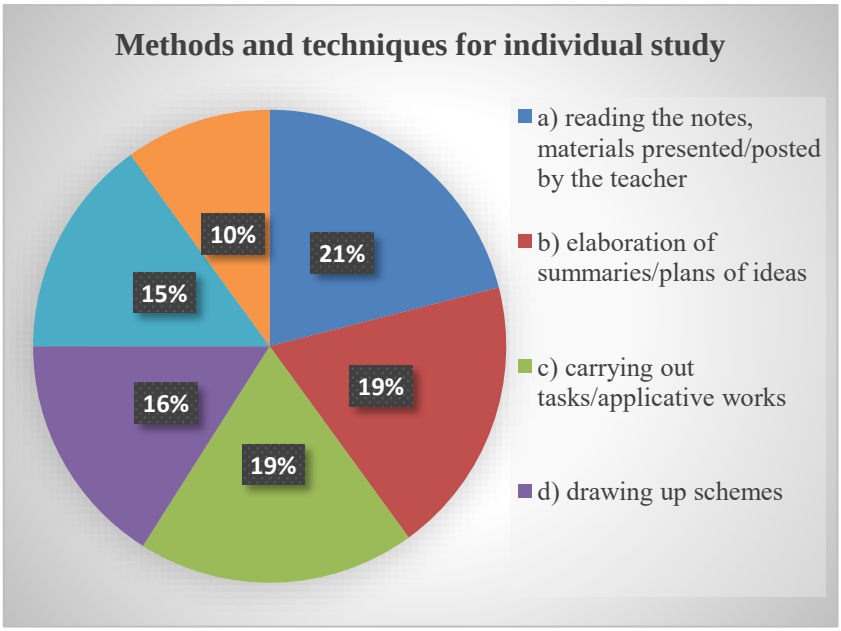

Figure 1. Methods and techniques for individual study

The applied questionnaire was also useful in identifying the difficulties that students often encounter in learning - item 8 of the questionnaire (see table 4):

Table 4. Difficulties encountered by students in learning

REAL CLASS	***VIRTUAL CLASS***
Organizing notes during class activity	Identifying and organizing resources
-	Difficult interaction
Searching and completing some information/notes from the class	-
Systematization, organization / schematization of information	Processing, understanding information
Managing negative feelings (fear of answering, lack of validation, envy, low self-confidence)	Managing negative feelings (anxiety, frustration, low self-confidence, depression)
-	Simulating the "teaching" of sequences of didactic activities
Completion of tasks/applicative works	Completion of tasks/applicative works
-	Difficult involvement in debates on various topics

Regarding the proposals that the subjects outlined for the purpose of facilitating and developing academic learning skills (item 11), we highlight the most frequently encountered in the inventory lists (table 5):

Table 5. Student proposals for the purpose of training effective academic learning skills

Student proposals for the development of effective learning skills	a) establishing clear objectives in learning
	b) completing information from several works/sources
	c) synthesizing knowledge with the help of graphic organizers (schemes, cognitive maps, diagrams, tables, etc.); practicing, within the didactic activities, how to make such instruments
	d) d) allocating time for the sedimentation/deepening of what has been appropriated
	e) positive attitude of teaching staff, trust invested in the student and counseling given in order to develop self-esteem

The third objective pursued was the investigation of the subjects' opinion regarding the role of the experimental Program focused on the development of academic learning competence in the training of future professionals in education. We present the obtained results below:

Item 6 asked subjects to identify 5 competencies that they would include in the desirable teacher profile. We present, in table no. 6, the competencies identified as elements of the portrait of the ideal teacher, but also the subjects' assessments of the competencies developed by the Experimental Program (item 7):

Table 6. Competencies of the ideal teacher

	Competencies of the ideal teacher	Frequency	Percentage
1.	Communication competence	22	32.25
2.	The competence to use some interactive methods	18	26.47
3.	The competence to use digital means	11	16.17
4.	Competence of stimulating students' curiosity/interest	10	14.70
5.	Objective assessment competence	7	10.29

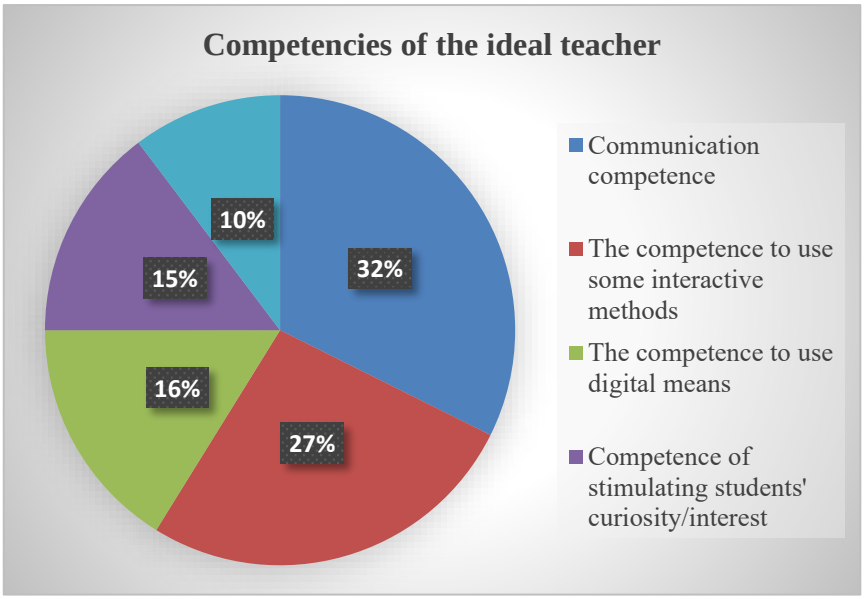

Figure 2. Competencies of the ideal teacher

The data in the table 6 and figure 2, show that among the competencies identified as elements of the portrait of the ideal teacher, the subjects considered that the best developed by the program were: communication competence – 22 subjects (32.25%); the competence to use some interactive methods – 18 subjects (26.47%); the competence to use digital means (16.17%).

Item 9 asked subjects to identify 10 personality traits that they would include in the profile of their ideal teacher. We present, in table no. 10, with the related graphic representation (figure 2), the ranking of the 5 most appreciated personality traits, as resulted from data processing:

Table 7. Personality traits of the ideal teacher

	Personality traits of the ideal teacher	Frequency	Percentage
1.	Pedagogical tact	16	23.53
2.	Empathy, understanding	15	22.06
3.	Respect for students	15	22.06
4.	Fairness, objectivity	12	17.65
5.	Professional training	5	7.35
6.	Responsibility	5	7.35

Among the listed personality traits, the subjects had the task, in item 10, to choose 3 that they believe they have developed, following the experimental Program. The results demonstrate that students primarily appreciate the pedagogical tact - 16 subjects (23.53%); in second place, with the same frequency, is teachers' empathy and respect for students - 15 subjects (22.06%); followed by fairness - 12 subjects

(17.65%) and on the last two places, professional training and responsibility - 5 subjects (7.35%).

It is observed that the subjects in the sample first appreciate aspects related to the teacher's personality, his human qualities, and only then focus on traits related to the professional side, to his psycho-pedagogical training.

4. Conclusions

All the theoretical and practical aspects presented, as well as the x-ray of the current situation by identifying these student opinions, had the role of indicating the directions we can follow in the initial training of students-future teachers:

a) students need the theoretical presentation and explanation of the essence and specifics of academic learning in order to be aware of and optimize their own learning;

b) non-cognitive factors should not be neglected, both regarding students (intrinsic motivation for learning; openness to new things, adaptability and flexibility) and teachers (pedagogical tact, empathy, respect for students, etc.) ;

c) the student's attitude towards their own development is very important: we believe that it is necessary for students to have confidence in themselves, in the ability to be successful, this being the first step towards initiative, perseverance, autonomy;

d) stimulating the student's motivation through the development of self-esteem is an effective strategy in the activity with students;

e) the choice of teaching-learning strategies must challenge the students to be aware of their own cognitive approach, to reflect critically on the steps taken and the difficulties encountered in learning, to identify the strengths and weaknesses in this regard.

The collected and interpreted data show that the implementation of an experimental program focused on the holistic approach to learning in the university environment can lead to a correct perception of the learning process, on the one hand, and on the other hand, to the optimization of the instructional-educational activity and to the gradual affirmation of students' autonomy in learning.

To stimulate students' interest, motivation, active involvement, we recommend that during online teaching-learning:

• students should be encouraged to have a critical attitude, to ask questions when they do not understand something; in addition, to be guided in seeking answers to questions when they realize that they do not understand something; in other words, to be taught to think critically, even in the online environment, and to learn how to learn;

• the call for various exercises, applied tasks, putting students in situations (solving the respective situation/problem, questions and reflections, problems;

• affective involvement by expressing interest, passion; communication must be accompanied by experience, on the one hand, to determine experiences;

We present in the figure below, the main motivational situations that can lead to effective communication:

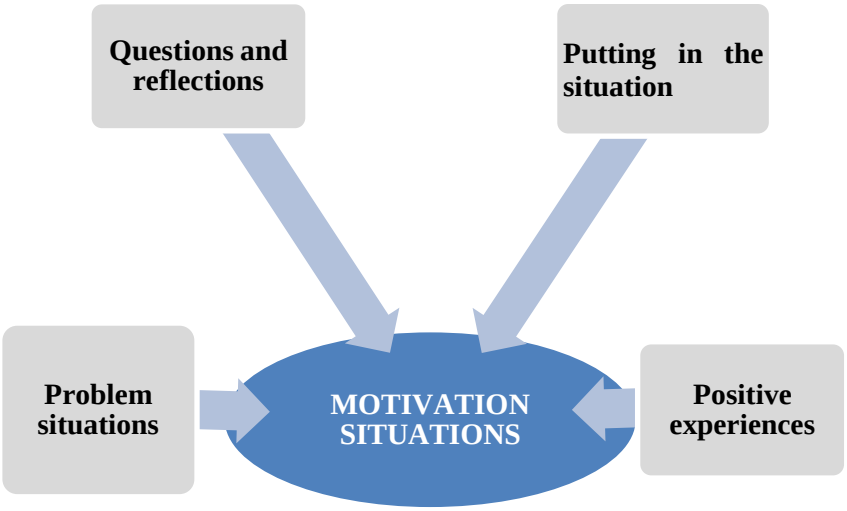

Figure 3. Motivational situations for effective communication

An effective speech must emphasize both the logic of arguments, rigorous organization, and affective aspects. A favorable, warm and harmonious atmosphere created during the educational act helps to prevent difficulties and demotivation of students. Both cognitive-rational and non-cognitive aspects (focused on emotion, affectivity) are important in making communication more efficient.

Being an effective educator means being well prepared for the effort (Caprara, Caprara, 2022), requires a certain level of social-emotional development; qualities such as resilience, flexibility and positivity (Lee & Oh, 2017) made it possible for students to survive the transition from the physical classroom to the virtual learning space (Crea & Sparnon, 2017; Gibson & Smith, 2018; Jena, 2016).

As directions for action, for building a positive instructional climate, we recommend:

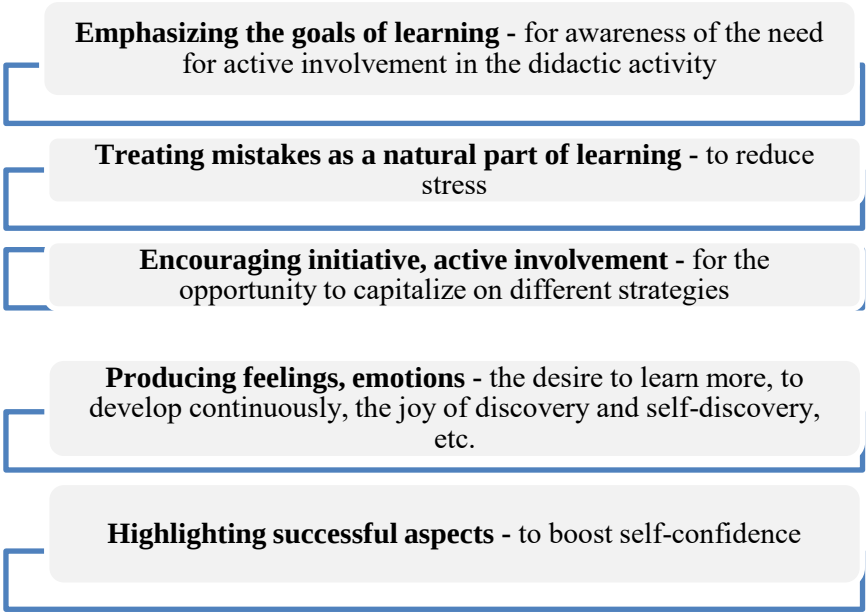

Figure 4. Directions for building a positive instructional climate

The collected and interpreted data show that the implementation of an experimental program focused on the holistic approach to learning in the university environment can lead to a correct perception of the learning process, on the one hand, and on the other hand, to the optimization of the instructional-educational activity and to the gradual affirmation of students' autonomy in learning.

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DIGITAL PLATFORMS, USED IN ACADEMIC LEARNING, DURING THE POST-PANDEMIC PERIOD*

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Abstract

The present study aims to address the issue of digital platforms used during the post-pandemic period in academic education, starting from the premise that some of the digital teaching or learning methods and tools used during the pandemic period, which have proven their effectiveness and usefulness, have continued to be present in the didactic activity.

The research carried out was focused on a sample consisting of 126 students and master's students, who were completing their psycho-pedagogical initial training program for the teaching career and who had the availability to respond to the opinion questionnaire, applied through a Google form.

The results of the questionnaire highlighted some essential aspects regarding the platforms used in academic activity over the period that followed the pandemic and, at the same time, allowed the highlighting of some advantages, shortcomings of their integration in making learning more efficient.

Key words: *Digital platforms; Academic learning; Digital learning; Digital divide; Post-pandemic period.*

1. Introduction. Theoretical premises of the research

Our study proceeds from three important premises:

- The pandemic period imposed the call to digital technology in order to carry out didactic activities.
- Some of the digital platforms/ tools used during the pandemic have proven their effectiveness in academic education.
- Consequently, the generalization of some educational practices regarding the use of digital resources in the activity with the students is required.

Digital resources can be defined as "Software, programs, applications, platforms, and (online or offline) resources that can be used with computers, mobile

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devices or other digital devices that help people complete a task" Oikonomou, Patsala, 2021, apud Moorhouse, Yan, 2023, p. 1).

Digital technologies include applications that allow the electronic display, storage and transmission of information (Cabi, 2015, apud Yazici, Özerbaş, 2022). The first condition for the use of digital resources is related to the access to infrastructure. From this point of view, it is obvious that, unfortunately, there are differences, sometimes significant, between people regarding the access to digital technologies. The digital divide is "the distance that exists between the people who have access to information and communication technologies and those who do not have it" (Van Dijk, 2017, apud Pérez-Serrano Flores, 2021, p. 1). Pérez-Serrano Flores, quoting Van Dijk (op. cit., p. 2), mentions several aspects that can explain this digital divide (op, the digital divide is determined by: 1. The social inequality that produces an unequal distribution of resources; 2. An uneven distribution of resources which leads to unequal access to digital technologies; 3. An unequal access to digital technologies also depends on the characteristics of these technologies. 4. The unequal access to digital technologies also implies an unequal participation in society. 5. An unequal participation in society reinforces inequalities in the distribution of resources.

According to Nóvoa (2019, apud Graça, Quadro-Flores, Ramos, 2022, p. 378), currently the initial training of teachers should articulate three important components, shown in figure 1, so that universities create environments for a quality training of the teachers to prepare them for the challenges of society nowadays.

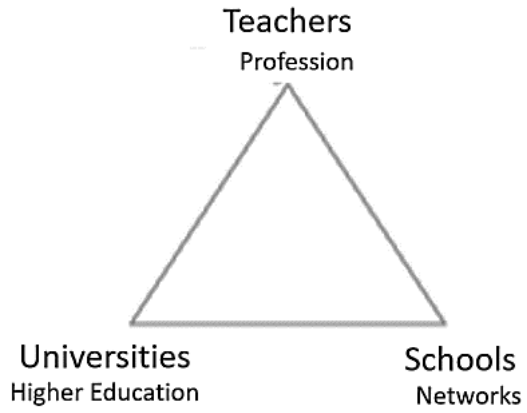

Figure 1. Formation Triangle (Nóvoa, 2019, apud Graça, Quadro-Flores, Ramos, 2022, p. 378)

The authors of a guide on the use of digital platforms in the English language arts (ELA) classroom, make some important recommendations regarding digital platforms, grouping them into three categories: 1) choosing, (2) using, and (3) critiquing digital platforms for learning (LeBlanc *et al.*, 2023, pp. 7-9):

1. Choosing Platforms:
   a. Investigate privacy practices
   b. Weigh the time and energy involved in implementation
   c. Evaluate embedded philosophies of teaching and learning.
2. Using Platforms:
   a. Be transparent about platform and data use
   b. Align platform uses with learning goals.
3. Critiquing Platforms:
   a. Critique platforms as part of sustainable professional development.
   b. Advocate for change.

Digital learning itself is a process of acquiring knowledge and learning skills, regardless of the form of competency and knowledge, using digital technology that is effectively accessed through devices such as smartphones or computers (Aditya, 2021, apud Arif, Nurdin, Sururi, 2023, p. 227).

The essential components of digital learning are presented in figure no. 2 (Oregon Department of Education, 2021, p. 3):

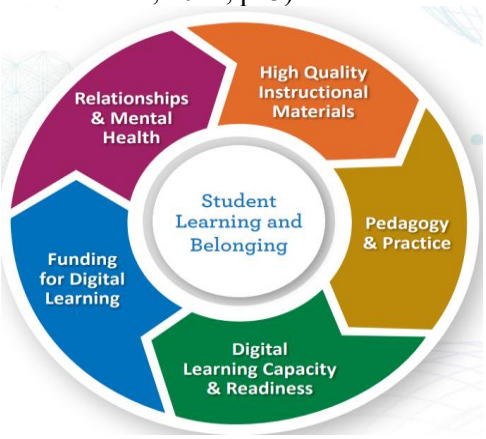

Figure 2. Key Components of Digital Learning (după Oregon Department of Education, 2021, p. 3)

What are the elements that ensure the success of digital platforms as learning tools? Faustmann, Lemke, Kirchner, Monett, (2019, p. 3), quoting Strecker, Kundisch, Lehner, Leimeister, and Schubert (2018), mention some essential attributes:

1) Interaction: The possibility to interact with each other.
2) Multi media: The use of different data formats and their processing for learning and teaching.
3) Multi codality: The existence of different symbol systems in a medium.
4) Multi modality: The parallel use of different sensory channels to transmit information.

By using, integrating new technologies in the lesson, the teacher can create a stimulating, motivating environment for the students (Sari, 2022).

In a study carried out at the level of primary and secondary schools, which have integrated digital technologies in the didactic activity from early on, Jewitt *et al.* (apud The Scottish Government, 2015, p. 15) mentions some important benefits:

- The use of digital resources gave students more time for active learning in the classroom;
- Digital tools and resources provided more opportunities for active learning outside the classroom, as well as providing self-directed spaces such as blogs and forums and access to games with learning benefits;
- Digital resources offered students opportunities to choose the learning resources;
- Resources provided safer spaces for formative assessment and feedback.

The introduction of digital platforms in the didactic activity leads to a wider application of the Internet and determines the integration of social networks, electronic portfolios, online courses, interactive tasks, digital means of storing and distributing the material in the educational environment (Vonog, 2018, apud Vonog, Batunova, Kolga, 2021, p. 1).

Also, the use of new communication technologies in the didactic activity transforms the traditional, pedagogical, monologue model, which has the teacher at the center, into a dialogue model, based on interaction, collaboration (Graesser, Sabatini, Li, 2022, apud Cabellos, Pérez Echeverría, Pozo , 2023, p. 1).

Communication interactions, student assessment, the use of technological tools, the online experience, pandemic anxiety or stress, time management and technophobia have been identified as the main challenges of online education (Rajab, Gazal, Alkattan, 2020, apud Sousa, Marôco, Gonçalves, Machado, 2022, pp. 1-2).

The practice of the last years, especially over the period that followed the pandemic, allowed to experiment with numerous ways and variants of integrating digital technologies in the didactic activity, including in forms combined with the face-to-face activity.

The flipped classroom is one of the modalities based on the use of digital technologies, combined with direct interaction, which has recently proven its effectiveness (Peceño-Capilla, Lluch-Molins, Bonilla-Pérez, Bakit, & Cortés-Pizarro, 2022).

Regardless of whether we refer to the activity with the pupils or students, the use of new technologies is a constant in the teaching-learning process in recent years.

2. Research Design

The purpose of the conducted empirical research was to identify the possibilities of capitalizing on digital platforms in the academic didactic activity, during the post-pandemic period.

The research question we started from was the following? Are there digital platforms that are still used in course/ seminar type activities, carried out with the students who are enrolled in the Psychopedagogical Training Program in order to form the skills necessary for the teaching profession?

This question took shape in three hypothetical statements:

1. *The use of digital platforms in the teaching activity is also extended to the post-pandemic period, as an effect of their advantages*
2. *Maintaining the use of virtual classrooms involves more advantages than disadvantages in the academic activity*
3. *The efficiency of digital platforms is greater in the case of course activities and asynchronous ones*

In order to validate these hypotheses, we initiated an empirical research of a constative type, on a ***sample*** consisting of 126 students and master's students of the University of Craiova.

The research tool we used was the ***opinion questionnaire***, applied through a google form. It included 9 items with closed answers, 2 items with open answers, 3 factual questions, regarding the status of the respondents (student/ master's student; faculty; specialization).

3. Results and Discussion

Next, we are presenting the results recorded in the applied opinion questionnaire, the answers given by the respondents being interpreted from the perspective of their possibility to validate/ deny the established hypotheses.

Thus, for the first hypothesis, ***The use of digital platforms in the teaching activity is also extended to the post-pandemic period, as an effect of their advantages,*** we have inventoried the answers to items 1, 2, 3 and 4 (of which question no. 2 was a multiple choice one).

Question no. 2 asked the subjects for their opinion on the situations when they continued to use digital platforms in academic activity, during the post-pandemic period. As can be seen in figure no. 3, almost half of the respondents said that they use these platforms only in certain situations, and 46% of them say that they use them in all situations.

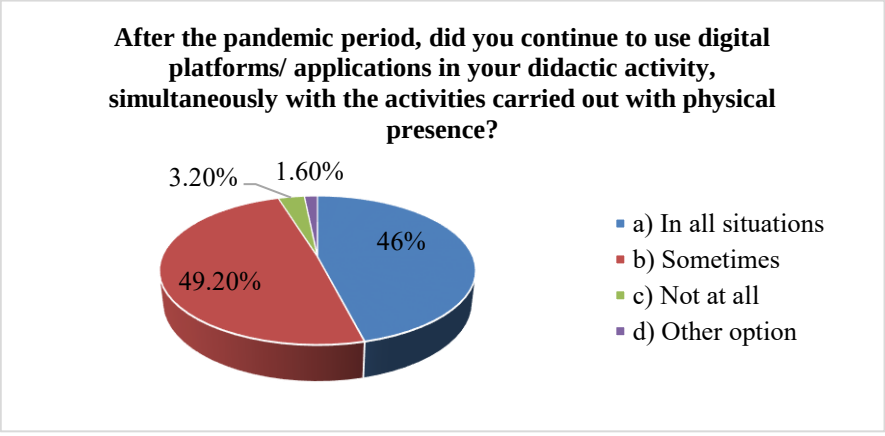

Figure 3. The students' opinion regarding the frequency of using digital platforms in the teaching activity, during the post-pandemic period

Among the most frequently used platforms, Google Classroom stands out (93.7%), followed by Google Meet (82.5%) and ZOOM (71.4%), as can be seen in figure 4.

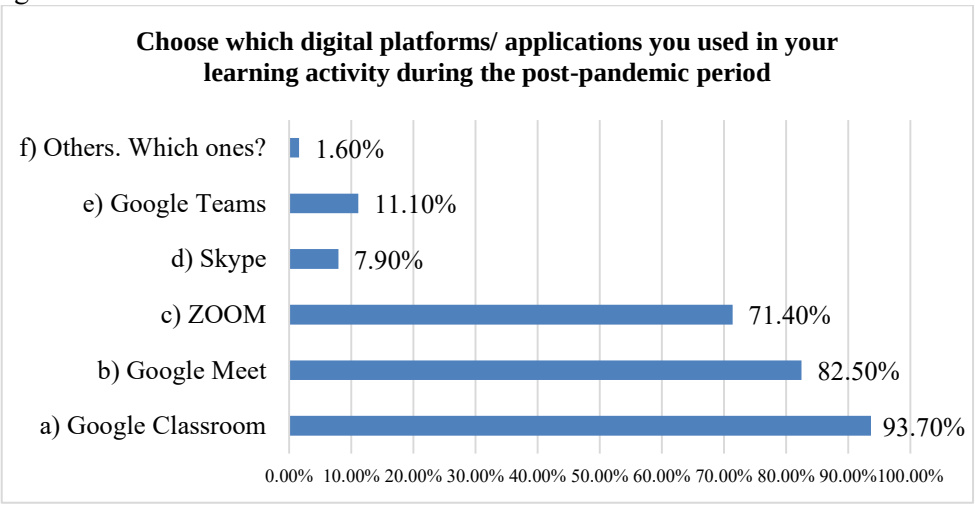

Figure 4. The students' opinion on digital platforms used during the post-pandemic period

Although it is obvious that the three previously mentioned platforms were at the top of the teachers' preferences, the hierarchy no longer holds when we refer to the students' preferences. As can be seen from their answers to item 3, only Google Classroom is among their preferences (77.8%), not Google Meet or ZOOM, applications that offer the possibility of conducting synchronous activities (figure 5).

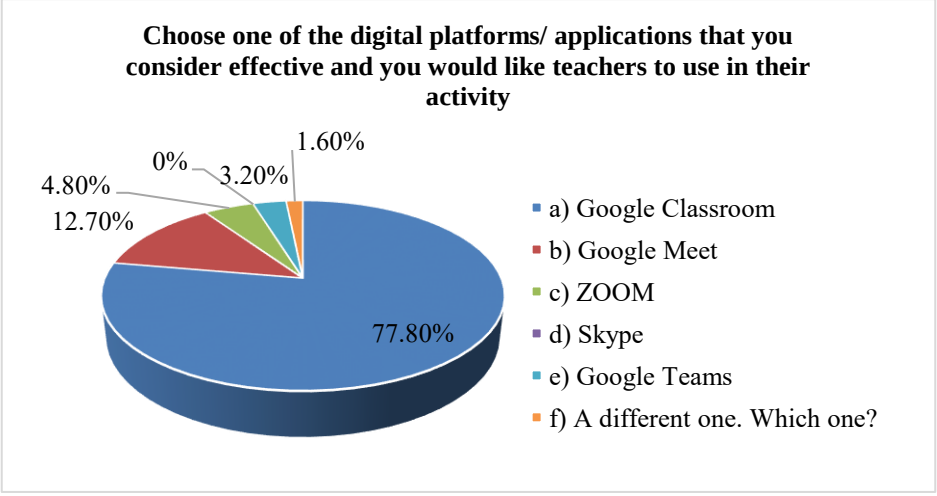

Figure 5. The students' opinion on the used digital platforms considered to be effective

A large part of the respondents (76.2%) express their total agreement with the continued use of digital platforms in their academic activity (figure 6).

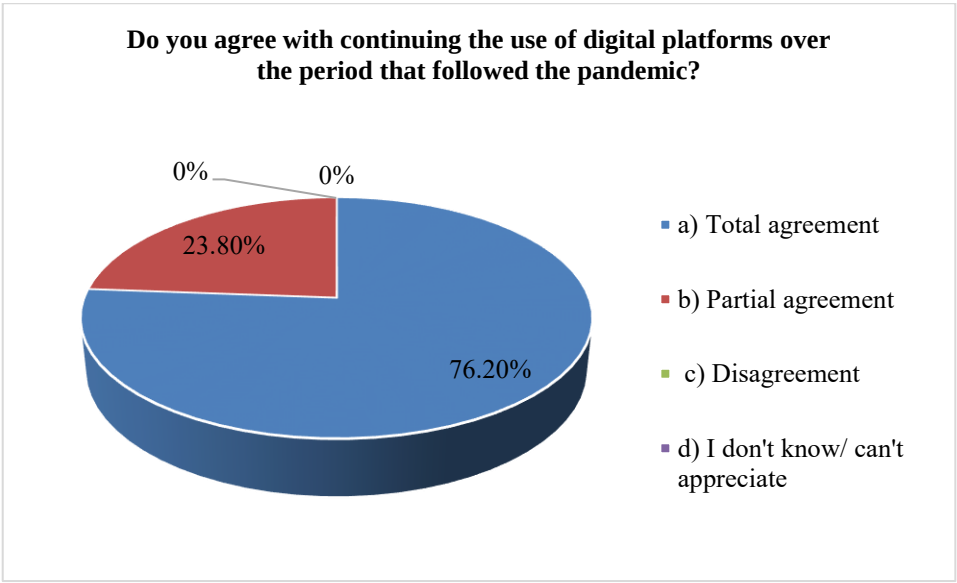

Figure 6. The students' opinion regarding the continued use of digital platforms in the didactic activity

The previously presented results confirm the truth value of hypothesis 1.

For hypothesis no. 2. ***The efficiency of digital platforms is greater in the case of course activities and asynchronous ones,*** we are presenting the results recorded in questions 5, 6 and 7 (questions 5 and 6 were open questions).

Question 5 sought to highlight the advantages of maintaining the use of digital platforms in the didactic activity.

We are presenting, in summary, some of the most frequently mentioned advantages:

- Facilitating access to courses, for people who cannot physically participate; attending the courses in case of poor health; greater attendance in classes
- Teachers can manage the students' homework more effectively
- Extensive accessibility: Digital platforms enable access to educational resources at a distance, which can help continuous learning and overcome geographical barriers
- Enhanced interactivity: With the help of digital tools, interactive lessons, educational games and personalized exercises can be created which can increase student engagement and understanding.

- Ease of resource management: Teachers can store and organize the teaching materials, monitor and evaluate student progress, and communicate more effectively with the students through digital platforms
- The possibility to post audio and video materials for a thorough understanding of the course
- It allows synchronous and asynchronous teacher-student interaction.

As major disadvantages (question 6), the students mentioned:

- Not all students have access to equipment and high-speed internet connection, which can lead to a discrepancy in their learning participation.
- Teaching exclusively online can reduce face-to-face interactions between teachers and students, which can affect the development of social skills and non-verbal communication.
- Excessive use of technology can lead to student overload
- In the case of practical work, the use of digital platforms is not useful
- It allows copying, unforeseen technical problems may arise, the materials may seem unclear without the direct help of the teacher
- Dependence on technology and the risk of social isolation, jeopardizing data security and privacy.

Item no. 7 sought to know the students' opinion regarding the efficiency of the continued use of digital platforms in the didactic activity. Most (83.7%) consider these platforms to be highly effective (figure 7).

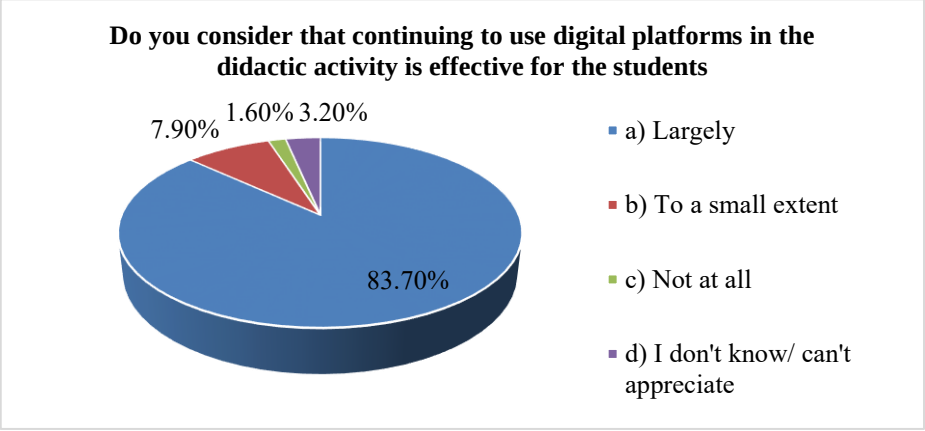

Figure 7. The students' opinion regarding the efficiency of using digital platforms in the didactic activity during the post-pandemic period

Hypothesis no. 2 of the research is also validated, as it could be seen from the results presented previously.

For hypothesis no. 3, ***The efficiency of digital platforms is greater in the case of course activities and asynchronous ones,*** we are using the recorded answers to questions 8, 9, 10, 11.

More than 60% of the surveyed students express their total agreement regarding the effectiveness of digital platforms in course-type activities (figure 8).

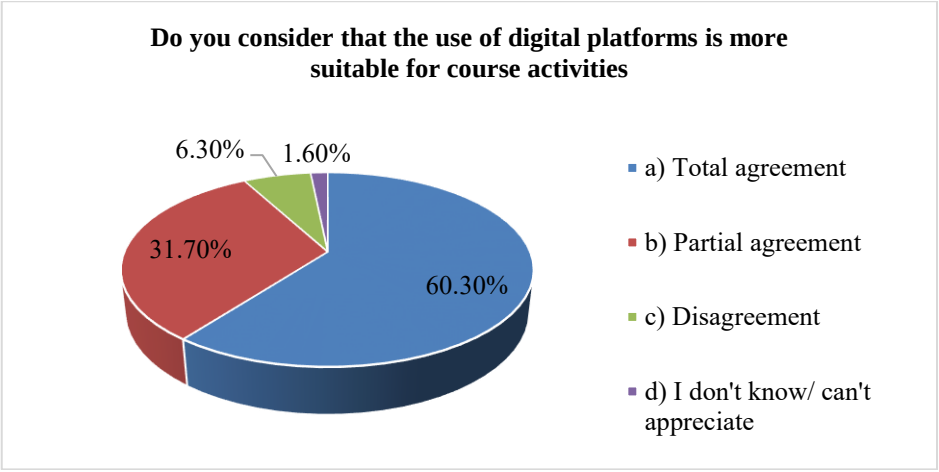

Figure 8. The students' opinion regarding the efficiency of using digital platforms in course-type didactic activity

For seminar-type didactic activities, approximately half of the students express total agreement with their usefulness (figure 9), the percentage being obviously lower than that expressed for course-type activities.

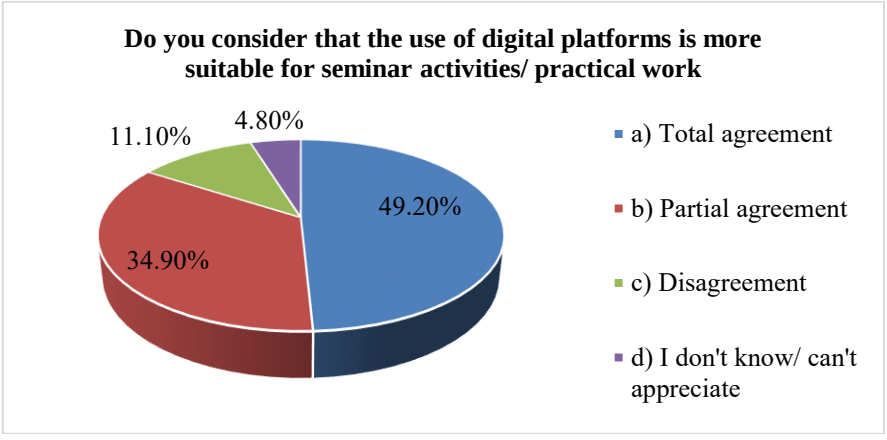

Figure 9. The students' opinion regarding the efficiency of using digital platforms in the seminar/ practical-type didactic activities

Almost half of the students think that both synchronous and asynchronous activities are equally effective (figure 10).

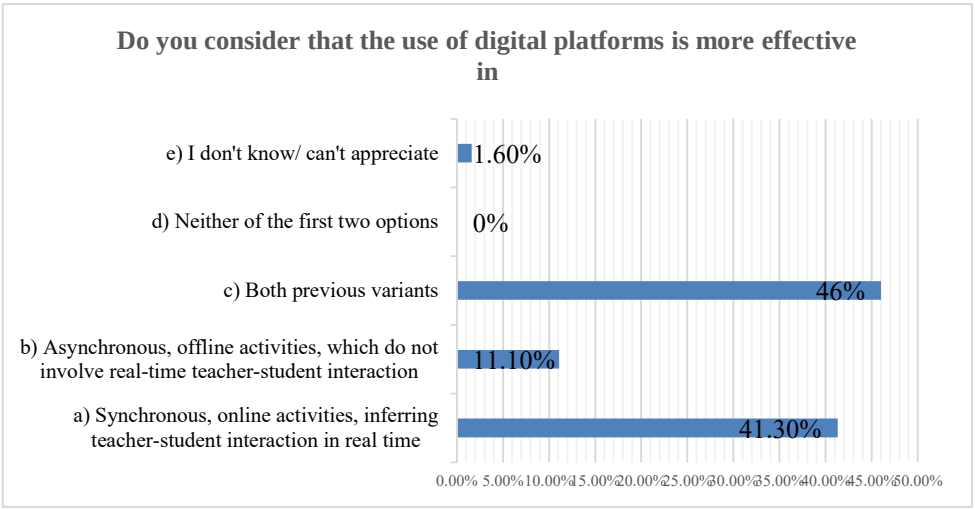

Figure 10. The students' opinion on the effectiveness of using digital platforms in synchronous/asynchronous activities

It can also be concluded that digital platforms are also effective to a great extent in the assessment activity, as claimed by almost 70% of the surveyed subjects (figure 11).

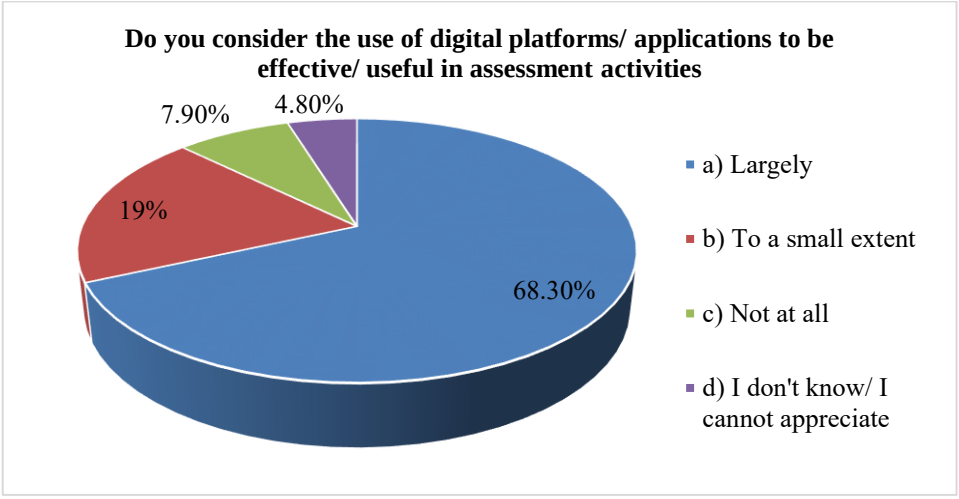

Figure 11. The students' opinion on the effectiveness of using digital platforms in assessment activities

The answers of the respondents to the last questions allow a conclusion to be drawn on the validity of hypothesis no. 3, which is only partially confirmed. Although the students admit that digital platforms are more suitable in course activities and less in seminar activities, however, they consider that they prove their

usefulness in both ways of conducting activities, synchronously and asynchronously. We deduce from this, a slightly contradictory character of the given answers, taking into account the fact that, usually, course activities are carried out synchronously.

4. Conclusions

Following our investigation, the following important aspects have taken shape:

- Most respondents consider it useful to maintain the use of digital technology in the academic activity
- Students believe that digital platforms are more effective in course activities compared to seminar/ project activities, in both asynchronous and synchronous activities
- It is important to balance the advantages and disadvantages of using digital platforms in education and integrate them properly to ensure effective and equitable education.
- There are specializations or topics that make it difficult to carry out the activity in online format (for example, for specializations in the field of music, acting).

We are concluding that the didactic activity, carried out in the present, regardless of the context, the level, the age of the beneficiaries, can no longer put aside the use of resources, of digital platforms, as tools or support in learning.

The use of digital resources in higher education is correlated, in recent years, with the concept of sustainable development. In this context, higher educational institutions have gradually become essential platforms for promoting sustainable development in the 21st century (Chen, Luo, Chen, Guo, 2022, apud Huang, Li, Huang, Jiang, 2023, p. 2).

Digital teaching platforms in the new era can create rich and diverse online teaching resources, help teachers make flexible teaching plans, and students achieve effective autonomous learning (Su, Jiang, 2021). They ensure an increase in student satisfaction, also having effects on reducing school dropout (Boozer, Simon, 2020).

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EFFECTS OF A DISTANCE LEARNING COURSE FOR TEACHERS ON PROPORTIONALITY ON THEIR PERCEPTION OF SELF-EFFICACY*

Laëtitia DRAGONE[1], Gaëtan TEMPERMAN[2], Bruno DE LIEVRE[3]

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Abstract

With the aim of strengthening the didactic capacity of teachers in the French-speaking Belgium in the teaching of proportionality, we designed a distance training course. The training lasted four weeks and benefited a total of 93 teachers.

To evaluate the effectiveness of this training, we administered a pre-test and a post-test, assessing respectively the teachers' self-efficacy, their feeling of confidence in the didactic field and their satisfaction with the training. The results showed a significant improvement in teachers' confidence and self-efficacy. These positive results underline the importance and relevance of offering further online training courses focusing on the teaching of proportionality, with the aim of optimizing teachers' pedagogical skills in this specific mathematical area.

Key words: *Distance training; Proportionality; Teachers; Didactical confidence level; Self-efficacy.*

1. Introduction

Learners may encounter various difficulties when faced with proportionality, such as recognizing a proportionality situation, identifying linearity relationships between data, choosing the appropriate procedure and many others (Bergeaut, Billy, Cailhol *et al.*, 2013).

At the same time, teachers do not always benefit from adequate training to tackle this mathematical notion effectively. Dragone, Temperman and De Lièvre (2022) have highlighted the challenges teachers face when teaching proportionality.

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They insist on the need to provide teachers with didactic paths adapted to this learning. Tzivinikou (2015) shares this view, highlighting the importance of teachers' sense of personal efficacy (SEP). In his view, appropriate training would not only improve teachers' SEP, but also the quality of their pedagogical interventions with learners.

With this in mind, it's imperative to fill the training gap and equip teachers with the tools they need to tackle proportionality confidently and effectively. With this in mind, the present study focuses on evaluating the effectiveness of a distance learning course dedicated to the teaching of proportionality, specifically aimed at teachers in French-speaking Belgium.

2. Review of the literature

2.1. Continuing professional development for distance learning teachers

In this type of online training, the motivation of participating teachers is mainly found in their desire to develop their professional skills as well as improve their teaching process (Gonçalves & Gonçalves, 2019). The continuing professional development of these teachers can then be defined as a process of acquisition and transformation of the skills and identity of individuals. It aims to improve, enrich and update professional practices, to act effectively as well as to achieve a better understanding of their work while feeling comfortable in it (Mukamurera, 2014). According to Charlier and Charlier (1998, cited by Renard & Derobertmasure, 2019), in-service teacher training is therefore essential. According to them, this type of training makes it possible to introduce innovations in teaching as well as helping teachers to develop their professional skills. What's more, in-service training is an important lever for change.

Distance learning can be organized in a variety of ways. According to Dmitriyeva *et al.* (2020), educational websites, electronic textbooks, audio and video teaching materials are often used. But that's not all: the organization of traditional teaching can be found in distance learning. For example, lectures can be given via videoconferencing or video conferencing.

2.2. Learners' difficulties with proportionality

Proportionality is an essential mathematical concept taught in Belgian schools, from primary to lower secondary level (Dragone *et al.,* 2022). Proportionality refers to a specific relationship between two quantities or sequences of numbers, where one is a multiple of the other. Quantities are characteristics of objects that enable them to be compared with one another (Daro, Geron & Stegen, 2007).

According to Bergeaut *et al.* (2013), students encounter several difficulties when faced with proportionality problems. For example, they have difficulty recognizing a proportionality situation because of the implicit nature of the statements. They also have difficulty identifying the quantities to be related, and sorting the data related to each quantity. What's more, they may have difficulty choosing the right procedure for solving the given problem.

Another frequent difficulty is the incorrect use of an additive procedure, as in the case of Brousseau's puzzle, where learners have to construct an enlargement

of the puzzle. Students are told that a segment 4 units long becomes 7 units in the enlarged puzzle. Some students then add 3 units to each segment (Oliveira, 2008).

These difficulties represent obstacles not only to learning proportionality, but also to teaching it. Indeed, according to Burgos and Godino (2020), teachers need to have the necessary skills to teach the various forms of reasoning applicable in proportionality situations, going beyond the simple application of the rule of three. This will then enable students to acquire a thorough understanding of the fundamental concepts associated with proportionality.

2.3. Challenges for teachers

As mentioned above, teachers face certain challenges when teaching proportionality. In their research, Burgos, Beltrán-Pellicer, Giacomone and Godino (2018) investigated these challenges with young teachers. According to them, most teachers find it difficult to formulate problems involving variations from an initial statement. Moreover, the statements created by young teachers are often too far removed from the initial problem, devoid of meaning or fail to respect the proportionality of the context.

A teacher must therefore possess not only problem-solving skills, but also the ability to select, modify and create problems for didactic purposes. It is also important for a teacher to be able to assess the quality of a learner's mathematical activity in solving a proposed problem and, if necessary, be able to adapt the problem to facilitate deeper mathematical activity on the part of the student (Malaspina, Mallart & Font, 2015).

Furthermore, according to Burgos and Godino (2020), initial teacher training is not sufficient when it comes to understanding mathematical objects. In their view, teacher trainers should therefore enable them to recognize and analyze students' difficulties in solving proportionality problems. Ongoing training would enable teachers to give meaning to the symbolism and mathematical representations involved in problem solving, to develop their rationality and to open up to new solving methods (Bednarz, & Proulx, 2010).

2.4. Self-efficacy

According to Gibson and Dembo (1984), this sense of self-efficacy can be broken down into two dimensions for teachers: the sense of personal efficacy (SEP) and the sense of general efficacy (SEG).

According to Bandura (2007), the concept of a sense of personal efficacy (SEP) refers to a person's belief in his or her ability to succeed at certain tasks and to solve specific problems by finding solutions. In the context of teaching, this SEP corresponds to a teacher's belief in his or her ability to impact learner learning (Gibson & Dembo, 1984).

As for the sense of general efficacy (SEG), this corresponds to a teacher's belief that he or she can bring about change in learners, regardless of external influence. It arises when the teacher believes that all learners are educable (Ross, Cousins & Gadalla, 1996).

Teachers' self-efficacy has a direct and positive influence on their students' motivation and success (Mojavezi & Tamiz, 2012). This conclusion was also found

in a study of 60 secondary school teachers by Shahzad and Naureen (2017). Moreover, it is important to note that a teacher's sense of self-efficacy is correlated with students' attitudes towards school (Al-Alwan & Mahasneh, 2014).

In-service training can be a key element in improving this sense of teacher self-efficacy. Indeed, Tzivinikou (2015) carried out in-service training for teachers and studied its effectiveness on this feeling. This author came to the conclusion that additional training had a positive impact on teachers' sense of self-efficacy, improving their educational interventions with their students.

3. Methodology

As we explained earlier, teachers face challenges when teaching proportionality (Burgos *et al.,* 2018; Dragone *et al.,* 2022). This audience therefore needs to be properly equipped to deal with them, and this can involve participation in in-service training (Burgos & Godino, 2020; Bednarz, & Proulx, 2010). We therefore decided to design an online continuing education course for teachers in French-speaking Belgium.

3.1. Distance learning design

For the purposes of our study, we chose to use Brinkerhoff's model (2005, cited in Duchaine, Gaudreau & Trépanier, 2021) to create and evaluate our distance learning course. This model breaks down into a total of six levels, and enables us to evaluate the effects of continuous training. The first level of this model consists in identifying the needs of the participants in our study. This first level has already been partially implemented in a previous study (Dragone *et al.,* 2022).

The second level of this model corresponds to the development of training using activities and tools adapted to the needs of the participants. Joyce and Showers (2002) carried out an analysis of the results of 200 studies on the effects of continuing education on teaching practices. According to these authors, an effective training program aimed at introducing a new method into the classroom should take 5 factors into account:

1. *Give explanations and information on the theory of the proposed method.*
2. *Provide a demonstration of the method by the trainers.*
3. *Offer participants the opportunity to implement the method during training.*
4. *Provide feedback to participants on their performance in the exercises.*
5. *Provide direct classroom support when applying the method.*

Taking these factors into account, we have meticulously designed our online training course. With regard to the first two factors, we opted for the use of video capsules to present the essential theoretical points clearly and in detail each week of the course. As for the other factors, we designed specific tasks to be carried out each week. This enabled participants to put their knowledge into practice and receive personalized feedback from tutors.

In one of their studies, Manasrah, Masoud and Jaradat (2021) investigated the ideal length of a video capsule in an online course. These authors were able to demonstrate that short videos were significantly more entertaining and enabled learners to perform better. Manasrah *et al.* (2021) concluded that the optimal length

of an instructional video is between 6 and 10 minutes. This length is confirmed by several other studies where this duration enables better concentration, motivation and attention on the part of learners (Harrison, 2019; Goopio & Cheung, 2020; Pfennig, 2022). Moreover, learning is more effective when the speech is delivered with a human voice rather than a computer voice (Mayer, 2017; Mayer & DaPra, 2012). We therefore took these various recommendations into account when creating our different video vignettes.

Our distance learning course on teaching proportionality for teachers in French-speaking Belgium took place over 4 weeks, from March 20 to April 16, 2023. This meant that participants had the opportunity to complete the activities each week, when they had the chance. We used the Moodle platform to support our online training. To do this, we created four tabs corresponding to each week. At the start of the course, only the first week was visible to learners, so content was made available as the course progressed.

For the first week, we administered a test to our participants to gather certain demographic information (years of seniority, type of study, gender...) as well as to determine their level of confidence and sense of self-efficacy prior to the training. Participants were also asked to watch an introductory training video. They then introduced themselves via a Digipad and completed an analysis activity. In the latter, teachers had to analyze the answers of six students to a proportionality problem, and determine the most appropriate solving strategy.

In the second week, participants were invited to view two video vignettes presenting students' difficulties with proportionality. They were then asked to identify a YouTube video on solving a proportionality problem. The teachers then had to present their video in the form of an infographic, identifying the students' difficulties as well as possible avenues for improvement.

In the third week, participants were asked to watch two videos dealing with possible ways of overcoming students' difficulties. Next, teachers were asked to produce a reflective account of their experience. They could either recount a real-life experience, or choose an exercise from a teaching pack. Participants then posted their work on a Digipad and were asked to comment constructively on another participant's production. We created this exercise with the aim of accentuating collaboration between the various participants in our training course. This collaboration was also present through the use of forums, as teachers were able to respond to each other. This collaboration between teachers in virtual environments has an impact on their professional learning. In fact, according to García-Martínez, Tadeu, Rueda and Batanero (2020), this collaboration between teachers during a training course has a significant impact on their professional learning.

For the final week of distance learning, teachers watched a final video presenting the didactic principles and learning methodology for teaching proportional problem solving. As a final activity, the course participants were then asked to create slides presenting a teaching sequence on proportionality. To do this, they had to identify the target audience, the general objective and write a short summary of the chosen sequence. Teachers were also asked to imagine two solved

examples and a solution by analogy for their teaching sequence. Finally, the teachers were asked to complete an end-of-course questionnaire. This measured the level of satisfaction with the training, the teacher's evaluation of the training, the participant's level of confidence and sense of self-efficacy.

We also provided tutoring throughout the course, with a team of three tutors. The latter acted as resource persons in the event of technical problems, as well as providing personalized feedback. According to Janson, Siebert and Dickhäuser (2022), receiving appropriate feedback improves learners' perseverance and learning performance. This is in line with Park, Johnson, Moon and Lee (2019), who demonstrate that specific feedback is more effective than global feedback. Touron and Hertzog (2014) concluded that timely and accurate feedback had a positive impact on learning, so we made sure to give accurate feedback to each learner as soon as possible after completing a task.

What's more, when an activity was correctly completed, a badge was assigned to the participant. For example, when a video was viewed by a teacher, he or she automatically received a badge associated with that activity. At the end of the training, each person who had completed all the tasks proposed received a "performance" badge to indicate their complete success. By using badges in this way, we wanted to give the teachers taking part in our training a clear idea of their progress, as well as offering them instant feedback.

Based on the Blank and De las Alas (2010) model, we can say that we have respected all the characteristics of a quality in-service training course. Indeed, this model includes five key criteria: training content that is clearly explained and adapted to participants' needs, active behavior on the part of participants, tools that are consistent with what is used in the classroom (e.g. the Digipad), duration and frequency of training, and collaboration between participants and with training tutors.

3.2. Sample

In order to invite teachers to take part in our online training course, we contacted school principals. They then informed the teachers wishing to take part in the training course about its organization. Our sample is therefore an occasional one, based on the availability of subjects.

In the end, our sample comprised a total of 93 teachers (11 men and 82 women). With regard to the seniority of our participants, our sample is mainly made up of teachers with over 20 years' seniority (N = 37). The other teachers are fairly evenly distributed between the different levels of seniority.

We can also classify the teachers taking part in our training according to their initial training. The majority are teachers with a bachelor's degree in primary education (70.968%). The remaining 29.032% are teachers with an AESI or a master's degree in didactics.

3.3. The measurement scales used

Still based on Brinkerhoff's model (2005, cited by Duchaine *et al.,* 2021), we assessed teachers' post-training satisfaction (level 3), the knowledge they were able to acquire (level 4), the transfer of this knowledge to their profession (level 5) and, finally, the impact of training on student results and achievement (level 6).

First, we used the teacher self-efficacy scale developed by Dussault, Villeneuve and Deaudelin (2002). This scale was designed to assess a teacher's degree of self-efficacy in relation to his or her profession. It asks teachers to position themselves in relation to fifteen propositions, using a Likert scale. The scale ranges from "strongly disagree" (1) to "strongly agree" (6). This scale by Dussault et al (2002) is used to assess teachers' self-efficacy by measuring two dimensions: sense of personal efficacy (SEP) and sense of general efficacy (SEG). We therefore used this scale to measure teacher self-efficacy as a pre-test in the first week of training and as a post-test in the final week. Similarly, we measured teachers' confidence levels before and after participating in the training. To do this, we simply asked the question "How confident are you in your didactic approach to proportionality? Participants could answer from 1 ("very little confidence") to 4 ("very much confidence").

Next, with regard to level three of Brinkerhoff's model (2005, cited by Duchaine *et al.,* 2021), we used Gaudreau's (2011) satisfaction questionnaire to assess teachers' satisfaction with our training. This was also presented in the form of a Likert scale ranging from "strongly disagree" (1) to "strongly agree" (6). At the end of the training course, teachers were asked to rate themselves on a total of eight statements.

For the last three levels (4, 5 and 6) of Brinkerhoff's model (2005, cited by Duchaine *et al.,* 2021), concerning the acquisition of new knowledge as well as its transfer and the impact of training on student results and success, we used the scale for evaluating training, called "Q4TE", developed by Grohmann and Kauffeld (2013) and translated into French by Chochard (2013). This scale aims to measure the effectiveness of training from the teachers' point of view, by exploring six dimensions with regard to training: satisfaction, usefulness, knowledge acquired, the application of this knowledge, work performance and the organizational results that this training was able to generate. Participants can then position themselves on a Likert scale according to twelve statements at the end of our training.

The Likert scale ranges from "strongly disagree" (0%) to "strongly agree" (100%).

Using these measurement scales, we were able to collect quantitative data on teacher self-efficacy, as well as teacher evaluation and satisfaction with our online training course on teaching proportionality.

3.4. Research questions

To study the impact of our training, we established various research questions based on Brinkerhoff's model (2005, cited in Duchaine *et al.,* 2021).

Table 1 presents each research question associated with each level of this model.

Table 1. Summary of research questions

Brinkerhoff's model	Research questions
Level 1	What training needs do teachers have?
Level 2	What activities and tools are available to meet teachers' needs?
Level 3	How satisfied were teachers with the training?
Level 4	To what extent did the training enable teachers to acquire new knowledge?
Level 5	To what extent will teachers transfer their new knowledge to their classrooms?
Level 6	What impact has the training had on student results and success?

4. Results

Thanks to the quantitative data we collected using the measurement scales of Dussault et al. (2002), Chochard (2013) and Gaudreau (2011), we were able to carry out descriptive and inferential analyses. To do this, we used JASP software and checked, for each procedure, that the postulates for applying a parametric test were respected; when this was not the case, we applied a non-parametric test to our data.

The presentation of our results follows the structure of Brinkerhoff's model (2005, cited by Duchaine *et al.,* 2021). However, it is not possible to present all the results, due to writing constraints.

Level 3: How satisfied were teachers with the training?

Table 2. Gaudreau's (2011) assessment questionnaire

	$\bar{x}$ (/6)	$\bar{x}$ (/100)
The content of this training course met my expectations.	3.906	65.100

This statement is taken from Gaudreau's appraisal questionnaire (2011). Teachers responding to the questionnaire were asked to rate themselves on a scale of 1 (strongly disagree) to 6 (strongly agree). We can see from Table 2 that the average is close to 4, so we can say that teachers' satisfaction with this distance learning course is quite good.

Table 3. Descriptive statistics Q4TE

	Valide	$\bar{x}$ (/100)
Q4TE satisfaction	32	66.875
Q4TE usefulness	32	69.688

In Table 3, we look at the descriptors relating to the "Q4TE" training evaluation questionnaire (Chochard, 2013). In this, the evaluation of the perceived usefulness of the training is at an average of 69.688%. Regarding satisfaction, the score is similar to the previous item in Gaudreau's questionnaire (2011).

Level 4: To what extent has the training enabled teachers to acquire new knowledge?

Table 4. Gaudreau's (2011) assessment questionnaire

	$\bar{x}$ **(/6)**	$\bar{x}$ **(/100)**
This training has enabled me to develop my knowledge of the teaching of proportionality	4.438	73.967
This training has enabled me to develop my intervention skills with students regarding the teaching of proportionality	4.156	69.267
This training has enabled me to reflect on my teaching practices and their influence on the teaching of proportionality to students	4.688	78.133

As a reminder, these three statements are taken from Gaudreau's (2011) assessment questionnaire. Table 4 shows that the degree of agreement regarding the development of intervention skills is close to 70%. In fact, 74% of teachers felt that the training had enabled them to develop their knowledge of the topic covered. In addition, 78% felt that the training had enabled them to reflect on their teaching practices and their influence on the teaching of proportionality to pupils.

The average SEP score in the post-test was higher than in the pre-test. This result is confirmed from an inferential point of view using the Wilcoxon signed rank test ($W = 79.5$; $p < .001$).

We find that teachers gain in didactic confidence after participating in our online training. Indeed, the average score at the start of training is 2.5 on a scale of up to 4, and increases to 3.031 after training.

The Wilcoxon signed-rank test shows a significant result ($p < .001$). We can therefore conclude that the overall impact of the training is significantly positive on participants' level of didactic confidence.

In addition, we observe a link between changes in didactic confidence and initial confidence. Since these results were statistically significant and negative (Spearman's Rho = -0.499, $p = 0.004$), we can conclude that the less didactically confident the teachers were about teaching proportionality, the more positively their level of confidence evolved at the end of the training.

Level 5: To what extent will teachers transfer their new knowledge to the classroom?

Table 5. Gaudreau's (2011) assessment questionnaire

	$\bar{x}$ (/6)	$\bar{x}$ (/100)
As a result of this training, I intend to modify some of my teaching practices for the teaching of proportionality.	4.719	78.65

Table 5 shows that the degree of agreement among teachers to change their teaching practices is close to 80%.

Level 6: What impact does training have on student results and success?

Table 6. Gaudreau's (2011) assessment questionnaire

	$\bar{x}$ (/6)	$\bar{x}$ (/100)
Following this training, I believe I have the necessary skills to effectively teach proportionality to students.	4.531	75.517

On the other hand, teachers feel they have the necessary skills to teach proportionality effectively, with 75% agreement.

5. Discussion

Learners can experience a variety of difficulties with proportionality in mathematics (Bergeaut *et al.,* 2013). For their part, teachers are not always sufficiently trained to teach this mathematical notion optimally. Dragone, Temperman and De Lièvre (2022) have highlighted the obstacles faced by teachers in this area, and stress the importance of providing them with suitable didactic tools. Teachers should be equipped with the skills required to teach the different forms of reasoning relevant to proportionality. This approach will foster a deeper understanding, enabling students to fully grasp the essential concepts of proportionality (Burgos and Godino, 2020). This research falls within this framework and aims to study the impact of an online training course on teachers' pedagogical practices towards proportionality.

As a reminder, our training took place over a total of four weeks and we were able to welcome a total of 93 participants. Before and after the training, these participants were asked to complete a questionnaire measuring their level of didactic confidence, their satisfaction with the training and their sense of self-efficacy.

To do this, we used three previously validated scales. The first assesses teachers' self-efficacy in relation to their profession, measuring two dimensions: SEP (sense of personal efficacy) and SEG (sense of general efficacy) (Dussault et al., 2002). The second measures the effectiveness of the training from the participants' point of view and is called the "Q4TE" (Chochard, 2013). And the last quantifies teacher satisfaction and was established by Gaudreau (2011).

Based on Brinkerhoff's (2005, cited by Duchaine *et al.,* 2021) six criteria for evaluating in-service training, we can highlight some positive results of our distance training on teaching proportionality.

Concerning the first level of this model, we studied teachers' training needs with regard to the teaching of proportionality by measuring their level of didactic confidence (Dragone *et al.,* 2022) and their sense of self-efficacy prior to our training. We planned our distance training taking into account the needs of the teachers as well as the various recommendations for creating quality training according to Joyce and Showers (2002) and the Blank and De las Alas (2010) model (second level).

For the third level, concerning teacher satisfaction (content presented, Q4TE satisfaction and usefulness), the content presented in this training seems to meet teachers' expectations, who also perceive it as relevant. This result can be related to the fourth level of Brinkerhoff's model (2005, cited by Duchaine *et al.,* 2021) concerning the acquisition of new knowledge by teachers who participated in in-service training. Indeed, our results indicate that the level of didactic confidence in teaching proportionality has evolved significantly and positively. In this distance learning format, participating teachers are mainly motivated by the desire to strengthen their professional skills and optimize their teaching methods (Gonçalves & Gonçalves, 2019). Through analysis of the responses to Gaudreau's (2011) satisfaction questionnaire, we note an improvement in intervention skills and pedagogical practices through the development of teachers' knowledge of proportionality teaching. We also observed a significant negative relationship between changes in didactic confidence and initial confidence. In other words, the less didactically confident teachers were at the start of training, the more positively their level of confidence evolved at the end of the course. Furthermore, teachers have a significantly higher sense of self-efficacy with regard to teaching proportionality at the end of this training. Teachers' self-efficacy plays a crucial role in their students' motivation and academic success (Mojavezi and Tamiz, 2012; Shahzad and Naureen (2017).

The fifth level focuses on teachers' transfer of new knowledge into their classrooms. For this level, we studied the modification of teachers' pedagogical practices (Gaudreau, 2011). Almost 80% of teachers agree that they will modify their teaching practices as a result of this training. This result is in line with Tzivinikou (2015), who believes that appropriate training can improve the quality of pedagogical interventions with learners. We have tried to meet the criteria defined by Joyce and Showers (2002) and the Blank and De las Alas (2010) model as closely as possible, in order to create an effective, high-quality training program. Finally, the last and sixth level investigates the impact of training on student results and achievement. At the end of this training, teachers show a degree of agreement of 75% concerning the skills required for effective teaching of proportionality. Ongoing professional development for teachers is an opportunity not only to enrich and update their teaching practices, but also to enable effective action while fostering a better understanding of their profession and a sense of comfort in their role (Mukamurera, 2014).

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HYBRIDER SON COURS POUR CONSTRUIRE DES CONTENUS LIBRES D'ACCÈS : LE CAS D'UNE FORMATION POUR LES FUTURS ENSEIGNANTS DE LANGUES*

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Résumé

Dans cet article, nous explorons l'hybridation des cours dans le contexte post-pandémique, en mettant l'accent sur les avantages et les défis de l'enseignement en ligne. Nous présentons un projet didactique visant à développer des séquences pédagogiques numérisées. Le projet décrit s'adresse particulièrement aux étudiants de licence en formation pour devenir enseignants de langues étrangères, en utilisant le polonais comme langue d'enseignement.

Les séquences d'enseignement/apprentissage à distance conçues pour ce cours sont proposées soit comme devoirs, soit comme contenu complémentaire par rapport aux séances du travail en présentiel. Les activités, axées sur la réflexion personnelle et le travail autonome, incluaient la lecture critique d'articles de recherche, l'analyse de manuels de classe et l'introduction à des thèmes théoriques.

Deux aspects de notre travail sont détaillés en particulier : tout d'abord, nous expliquons comment les modalités du travail en ligne répondent aux besoins des étudiants-futurs enseignants et comment elles s'inscrivent dans les exigences de la formation académique contemporaine. Ensuite, nous discutons des défis, tant conceptuels que techniques, liés à la scénarisation des séquences en ligne.

La recherche met en évidence le potentiel de l'hybridation pour ce qui est d'améliorer à la fois la structure des cours et de la clarté de l'enseignement.

Mots-clés : *Hybridation de cours ; Glottodactique ; Formation des futurs enseignants de langue ; Ressources éducatives libres (REL).*

INTEGRATING HYBRID LEARNING TO DEVELOP OPEN-ACCESS CONTENT: A STUDY ON A TRAINING COURSE FOR PROSPECTIVE FOREIGN LANGUAGE TEACHERS

Abstract

In this article, I explore the hybridization of courses in the post-pandemic context, focusing on the advantages and challenges of online teaching. I present a

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didactic project aimed at developing digitalized scenarios. The project specifically targets undergraduate students training to become foreign language teachers, using Polish as the language of instruction.

The distance teaching/learning sequences designed for this course are offered either as assignments or as supplementary content to in-person session work. The activities, focused on personal reflection and autonomous work, included critical reading of research papers, analysis of classroom textbooks, and an introduction to theoretical themes.

Two particular aspects of my work are detailed: first, I explain how the modalities of online work meet the needs of student-future teachers and fit into the requirements of contemporary academic training. Then I discuss the challenges, both conceptual and technical, related to the scripting of online sequences. The research highlights the potential of hybridization for improving both the structure of courses and the clarity of teaching.

Key words: *Coursehybridization; Glottodidactics; Training of Future Language Teachers; Open Educational Resources (OER).*

1. Introduction

À l'ère postpandémique, l'hybridation des cours est devenue une pratique répandue dans de nombreuses universités, du moins parmi certains enseignants. En parallèle, la gestion du travail didactique en ligne soulève de nouveaux questionnements qui vont au-delà des préoccupations techniques, liées notamment à l'accès aux ressources et à a maîtrise des outils. Ces questionnements permettent de reconsidérer dans un nouveau cadre l'une des questions essentielles de la recherche sur l'enseignement/apprentissage en ligne – à savoir, l'utilité et la valeur des activités proposées aux apprenants. Pourquoi, en effet, travailler en ligne ? Quels sont les avantages de cette démarche et comment impacte-t-elle le travail en présentiel ?

Dans cet article, nous rendons compte d'un projet didactique réalisé durant l'année académique 2022/2023 et de sa continuation actuelle. Le projet décrit a été financé par l'Université Adam Mickiewicz de Poznań dans le cadre d'un programme qui invite les enseignants à construire des cours libres d'accès en ligne. Cette initiative vise à promouvoir les innovations dans le domaine de l'enseignement, à faciliter le partage des bonnes pratiques et à encourager le dialogue entre les enseignants disposant des cours similaires.

Pour répondre aux exigences du programme, nous avons élaboré des activités interactives pour un cours de deuxième année de licence, destiné aux étudiants se formant pour devenir enseignants de langues étrangères. Compte tenu de la diversité du groupe (futurs enseignants de français et d'italien), le cours[2] est dispensé en

[2] Le cours en question s'intitule « La didactique de français/italien langue étrangère à l'école primaire ». Il est réalisé pendant deux semestres et compte au total 90 heures de travaux pratiques (3 cours de 30 heures chacun). Il s'inscrit au cursus proposé aux étudiants de licence qui suivent une formation complémentaire par rapport au programme d'études et qui leur

polonais, la langue maternelle des étudiants. Ainsi, les contenus créés peuvent être réutilisés par les formateurs de l'Université Adam Mickiewicz pour enseigner à de futurs enseignants de langues, quelle que soit leur spécialité.

Nous exposerons ci-dessous la forme et les contenus des ressources développées et publiées sur la plateforme Moodle de notre université. L'objectif est de mettre en avant les aspects des activités élaborées qui illustrent la spécificité de la réflexion glottodidactique et visent à transformer les représentations initiales des apprenants sur l'objet du travail de l'enseignant et ses responsabilités.

Nous détaillerons en particulier deux aspects de notre travail : comment les modalités du travail en ligne répondent aux besoins des étudiants-futurs enseignants et comment elles s'insèrent dans les exigences de la formation académique contemporaine.

Nous présenterons aussi les caractéristiques des séquences élaborées qui permettent de les qualifier en tant que ressources éducatives libres (Wiley et Hilton III, 2018 ; Dessus et Besse 2020) susceptibles de renforcer la collaboration entre les professeurs invités à les exploiter et à y apporter des ajustements nécessaires.

2. Conception d'un cours hybride avec des objectifs novateurs, complémentaires et mieux adaptés à une formation professionnalisante

Les enseignants sélectionnés pour le projet d'innovation didactique ont été chargés de créer préparer pour leurs cours au moins 5 modules de travail en ligne, de 90 minutes chacun. En conséquence, notre travail a consisté à concevoir et à réaliser des séquences de travail pour les cours proposés dans le cadre de la formation des futurs enseignants dont le but est de :

- Les préparer au travail en classe ;
- Leur fournir des outils pour réagir aux problèmes rencontrés (innover, adapter leur enseignement aux besoins de leurs apprenants) ;
- Continuer à développer leur compétence professionnelle et se tenir au courant des avancées dans le domaine de la glottodidactique.

Les séquences digitalisées complètent ou élargissent ainsi les contenus exploités dans le cours en présentiel. Les contenus proposés forment des séquences de travail autonome et sont libres d'accès, ce qui veut dire que chaque enseignant de l'université peut les utiliser dans son travail.

Le but a été d'accompagner la formation en présentiel, en proposant notamment, comme travail en ligne, les devoirs et les activités de révision.

Les séquences en ligne, du fait de leur caractère complet, peuvent être utilisées pour remplacer certains cours dispensés traditionnellement en présentiel. Les ressources peuvent également servir pour proposer un rattrapage à un étudiant absent ou comme un travail supplémentaire pour les personnes particulièrement intéressées

permet, après avoir terminé deux cycles universitaires (licence et master) d'enseigner la langue de leur spécialisation dans les écoles primaires et secondaires en Pologne. La formation professionnelle des futurs enseignants en Pologne se réalise uniquement à l'Université et en présentiel.

par le domaine. Les activités ont été conçues pour être réalisées au rythme individuel : l'étudiant peut reprendre les exercices qu'il considère comme difficiles, il peut en refaire certaines au moment de la révision puisque les contenus du cours virtuel complètent ses notes.

La dimension innovante réside dans le caractère autonome des modules préparés, qui reposent entièrement sur le travail en ligne. La stratégie adoptée pour élaborer les séquences était nouvelle pour nous puisque nous avons dû explorer les fonctionnalités de la plateforme Moodle non seulement pour digitaliser les activités, mais aussi donner une forme claire et compréhensible au guidage de l'apprenant. Cette démarche différait de nos pratiques antérieures où la plateforme nous servait avant tout à mettre à disposition des étudiants les ressources (principalement des fichiers Word et des photocopies) exploitées en classe et déjà distribuées dans leur forme imprimée. En même temps, le cours ainsi hybridé s'inscrit bien, tant par sa structure que par ses objectifs, dans les exigences et les attentes de l'enseignement académique contemporain :

- Implanté sur la plateforme universitaire Moodle, le cours est facile d'accès et disponible au large public d'enseignants et d'apprenants habitués, depuis la pandémie, au travail dans de nombreux systèmes de gestion de l'apprentissage en ligne.
- Le cours permet de moderniser l'enseignement et de l'adapter davantage aux attentes des enseignants et des étudiants qui bénéficient avec succès de l'essor des formations en ligne complétant les cours académiques (comme les MOOCs et les webinaires). En privilégiant la lecture et le travail écrit à partir des ressources publiées sur la plateforme, les séquences proposées permettent de mieux encadrer la démarche personnelle del'étudiant. De même, le travail en ligne enrichit et diversifie les possibilités d'échanges au sein du groupe qui assiste au cours en présentiel.
- La forme électronique du cours facilite l'analyse de sa réception par le public concerné et l'évaluation de son efficacité par rapport aux objectifs d'enseignement visés.
- De plus, étant donné que les ressources sont rédigées en polonais, elles peuvent être proposées à des groupes d'étudiants de langues autres que le français, permettant ainsi de diversifier les sources de référence et de diffuser les éléments de la recherche réalisés en français.
- Il convient également de remarquer que, par rapport aux ressources didactiques imprimées, la formation proposée peut être plus facilement actualisée et complétée par tout enseignant désirant y intégrer des questionnements spécifiques à la communauté de la langue qu'il enseigne.

Outre les avantages soulignés par l'administration de l'université et mentionnés ci-dessus, la réalisation du cours nous a offert l'opportunité de revisiter les questions sur l'opérationnalisation des objectifs et des contenus de la formation des futurs enseignants, notamment celles concernant le rôle des technologies dans l'élaboration des programmes de cours sous forme de travaux pratiques.

3. Présentation des contenus et de la structure du cours

L'innovation proposée incite à une réorganisation les contenus des cours en présentiel. Les séquences en ligne mettent l'accent sur les dimensions de l'apprentissage qui peuvent parfois échapper à la vigilance de l'enseignant lors d'échanges avec le groupe dans son ensemble, comme souligné par Walckiers et Praetere (2004) ainsi que Deschryver (2009). De plus, l'élaboration de contenus en accès libre mobilise l'enseignant à proposer une offre qui tient compte des ressources déjà disponibles en ligne. Ceci évite la duplication des idées et garantit que les ressources développées répondent réellement aux besoins spécifiques identifiés dans notre contexte (Bruillard, 2023). Les premiers sujets élaborés pour le cours sont détaillés dans le tableau ci-dessous.

Tableau 1. Objectifs et forme des séquences pédagogiques élaborées

Sujet de la leçon	Activités proposées	Support
1a. Développer l'expression écrite en langue écrite. Durée : 120 min.	**Description du travail :** Lecture individuelle de trois articles de vulgarisation scientifique publiés dans une revue polonaise pour les enseignants de langues suivie d'une séquence d'activités interactives. -------- **Objectifs des activités :** Contrôler les aspects de compréhension particulièrement exigeants. Mettre en exergue ce qu'on considère comme appartenant aux apprentissages essentiels. Mettre en pratique des postulats concernant l'encadrement pédagogique du travail en classe.	Application H5p, activité interactive *book*, avec de nombreux quiz à caractère fermé. L'activité est divisée en deux parties, chacune contient une introduction, 5 activités et un bilan.
1b. Développer l'expression écrite en langue étrangère Durée : 45 min	**Description du travail :** L'analyse du manuel. Les étudiants sont invités à analyser l'activité d'expression écrite proposée dans le manuel « Pixel 3 ». -------- **Objectifs des activités :** Mise en pratique des principes de travail concernant le développement de l'expression écrite introduits dans la leçon 1a. La réflexion de l'apprenant est encadrée par l'activité explicative de l'enseignant.	Application H5p : *Image interactive* (pour ajouter la traduction des contenus de la page du manuel en polonais). *Questionnaire vrai/faux,* *Dialogue cards.*

	Le cours contient un quiz avec des questions ouvertes, commentées par l'enseignant.	
2a. Corriger l'expression orale en langue étrangère – stratégies de l'enseignant Temps de travail : 45 min.	**Description du travail :** Lecture individuelle d'un article de vulgarisation scientifique publié dans une revue polonaise pour les enseignants de langues suivie d'un questionnaire. -------- **Objectifs des activités :** Vérifier la compréhension du texte. Guider la lecture, attirer l'attention vers certaines thèses et conclusions.	Test Moodle, questions fermées. (Chaque question contient un feedback).
2b. Corriger l'expression orale en langue étrangère – stratégies de l'enseignant Temps de travail : 30 min.	**Description du travail :** Lecture individuelle d'un article de vulgarisation scientifique publié dans une revue polonaise pour les enseignants de langues suivie d'un questionnaire. -------- **Objectifs des activités :** Vérifier la compréhension du texte. Guider la lecture, attirer l'attention vers certaines thèses et conclusions. Analyser et interpréter les données transcrites.	Activité interactive préparée à partir des données fournies dans un article de recherche (échanges transcrits entre l'enseignant et ses apprenants). Quiz *vrai/faux* qui reprend les idées essentielles du texte.
3a. Préparer l'étudiant au stage pédagogique à l'école. Construire une enquête d'évaluation pour ses apprenants Temps de travail : 2x 45 min.	**Description du travail :** Partie 1 : Leçon complète à réaliser de façon autonome en ligne (partie 1) Partie 2 : Lecture d'un chapitre venant d'une monographie suivie d'un questionnaire. -------- **Objectifs des activités :** Partie 1 : Proposer un commentaire complet pour une activité réalisée en tant que devoir : prévenir certaines erreurs, négocier les attentes. Partie 2 : Vérifier la compréhension du texte. Guider la lecture, attirer l'attention vers certaines thèses et conclusions. Analyser et interpréter les solutions fournies.	Présentation réalisée à l'aide de l'application canva.com. Test Moodle (questions fermées et ouvertes).

3a. Préparer l'étudiant au stage pédagogique à l'école. De l'importance de l'attitude critique dans le travail de l'enseignant. La notion d'autonomie cognitive. Durée de travail : 60 min.	**Description du travail :** Leçon complète à réaliser de façon autonome en ligne. -------- **Objectifs des activités :** Présenter un sujet théorique. Proposer les activités interactives pour tester la compréhension des documents lus.	Application H5p, activité *Accordion*. Les contenus théoriques sont mis en page dans une forme électronique. Test Moodle (questions fermées et ouvertes).

Les activités conçues pour le cours en ligne consistent en :

- Une lecture critique d'articles, visant à aider à comprendre le texte, à identifier ses idées essentielles, saisir les thèses et les arguments présentés, et à leur exploitation (par exemple, une application critique des solutions proposées) dans un scénario encadré ;
- L'analyse de manuels et de ressources didactiques afin de décrire les démarches attendues de l'enseignant ;
- L'introduction de certains thèmes théoriques, comme les techniques pour observer le travail de l'enseignant et les critères utilisés pour évaluer ce travail.

Les sujets et les objectifs des séquences que nous proposons lors du travail en ligne visent à répondre aux besoins de nos étudiants. Lors du travail en visioconférence pendant la pandémie et lors du retour à l'enseignement en présentiel, nous avons constaté que l'exploration des articles scientifiques, proposée le plus souvent sous forme de discussions de groupe et basée sur des questions ouvertes, n'engageait pas suffisamment les étudiants. Ils faisaient peu référence au texte, ne le problématisaient, ni ne le questionnaient[3]. Par conséquent, dans les analyses qu'ils effectuaient ensuite, notamment avec du matériel pédagogique varié (fiches de travail, extraits de manuels de langues), il y avait trop peu de références aux connaissances disciplinaires.

Nous avons conclu que la formule du travail en classe ne laisse pas toujours suffisamment de temps pour développer de façon encadrée les compétences académiques, bien que cet objectif demeure essentiel dans la formation des futurs enseignants. Nous suggérons que le travail en ligne pourrait offrir des solutions supplémentaires aux difficultés identifiées et contribuer à une meilleure réalisation des objectifs de notre cours, dont l'objectif est à la fois de développer les savoirs disciplinaires que les savoir-faire spécifiques au métier d'enseignant.

[3] Vu le format du présent texte, ce sujet ne peut pas être développé davantage. Les déficits identifiés dans le discours académique des étudiants font cependant objet de nombreuses recherches (entre autres Delcambre et Lahanier-Reuter, 2012).

Les activités visent à initier les futurs enseignants à la glottodidactique en tant que domaine de recherche et à développer leur réflexion professionnelle à travers un travail sur leurs représentations de la langue, de la communication et du processus d'enseignement/apprentissage. Nous ambitionnons de développer et de structurer les connaissances disciplinaires des étudiants et leur réflexion épistémologique dans le domaine de la glottodidactique en les confrontant à des stratégies de problématisation, à des formes d'analyse et d'évaluation de la réalité pédagogique telles qu'elles sont présentées et commentées dans la recherche glottodidactique actuelle.

À travers les activités développées, nous proposons une certaine vision du travail de l'enseignant, de ses compétences et de ses responsabilités. Cela reflète en partie un modèle de travail de l'enseignant réflexif (Schön, 1994), capable de mener une réflexion particulière : en action et sur l'action. Nous adhérons à la conception qui associe le professionnalisme dans ce métier à la capacité à comprendre sa pratique, non seulement grâce aux démarches personnelles (par exemple, analyse d'événements critiques), mais aussi suite à la collaboration avec d'autres enseignants (Jaworska, 2020).

Pour conclure, nous tenons à dire que l'hybridation du cours et la construction des modules de travail en ligne permettent de concrétiser la réflexion sur l'enseignement/apprentissage assisté par ordinateur et offrent aux apprenants une expérience qu'ils peuvent ensuite soumettre à l'évaluation critique. L'étudiant qui participe au cours développe ainsi sa réflexion technopédagogique sur la conception du scénario et sa mise en forme adaptée au travail individuel et au contexte virtuel - par exemple, sur les stratégies qui peuvent contribuer au maintien de l'intérêt et de la motivation des participants. De plus, la structure des activités est assez rigoureuse et cherche à modeler certains comportements attendus chez les étudiants-futurs enseignants qui seront amenés à travailler dans le contexte virtuel, concevoir les objectifs de la formation, préparer les activités et varier les formes d'évaluation.

4. Choix conceptuels et techniques adoptés pour rendre le cours ouvert

Lors de l'élaboration des séquences en ligne, notre intention a été de tirer pleinement parti des possibilités offertes par la plateforme Moodle et le plugin H5p, qui permet d'élargir le répertoire d'exercices interactifs pouvant être publiés dans le cours. Nous présentons ci-dessous les idées pédagogiques qui nous ont permis d'innover notre pratique et nous mettons l'accent sur ces aspects du travail d'enseignement que nous apprécions le plus dans notre démarche axée sur le développement des ressources éducatives libres.

a) Retour immédiat dans les tests interactifs qui guident la lecture des articles scientifiques

Dans le cours, nous proposons des questionnaires pour guider et vérifier la compréhension des articles dont la lecture est assignée comme devoir. Après avoir répondu aux questions, les apprenants reçoivent un feedback. Dans le cas des réponses incorrectes, le retour fourni peut, notamment, orienter l'apprenant vers la section appropriée du texte lu et/ou présenter une explication qui met en évidence

les idées principales du texte. Lorsque la réponse fournie est correcte, nous réitérons les idées du texte et nous reformulons l'information attendue.

Texte de référence :

wlak, M. 2020. « Korekta błędów językowych jako integralny element interakcji w klasie językowej » [La correction des erreurs linguistiques comme élément intégral de l'interaction en classe de langue]. *Języki Obce w Szkole 2020/3*, 39 - 46.

Question 1. La correction des erreurs linguistiques par l'enseignant est une technique de travail efficace qui peut accélérer le processus d'acquisition d'une langue étrangère.

a) Oui, car c'est ce que les élèves eux-mêmes attendent, et cette correction est alors plutôt durable.

Feedback pour la réponse correcte : Oui, la correction des erreurs peut stimuler les processus d'acquisition d'une langue étrangère, car la réaction immédiate aux erreurs commises par les apprenants est plus pertinente, compréhensible pour l'apprenant et elle aide à ancrer les règles correctes dans la mémoire de l'apprenant.

b) Non, car corriger les erreurs dans une communication spontanée et naturelle n'est pas fréquent dans la vraie vie (p.ex. lorsqu'on parle entre amis).

Feedback pour la réponse incorrecte : L'apprentissage d'une langue étrangère se déroule dans des conditions différentes de l'acquisition de la langue maternelle. Les questions de correction linguistique dans le contexte discuté se rapportent aux situations d'enseignement d'adultes. Il convient notamment de tenir compte du fait que l'élève et l'enseignant collaborent dans le cadre d'un contrat pédagogique, et que leur collaboration vise la maîtrise de la langue étrangère par l'élève. La correction peut contribuer au développement des connaissances implicites ou à l'automatisation des règles et des principes déjà appris[4].

Figure 1. Le retour à la réponse correcte et incorrecte dans l'activité de lecture de l'article scientifique

Comme nous pouvons le constater, le feedback proposé revient sur ce que nous considérons comme informations essentielles du texte et, de manière plus générale, de l'enseignement offert que l'apprenant est censé retenir.

b) Commentaire explicite et argumenté qui permet à l'enseignant d'exposer son point de vue

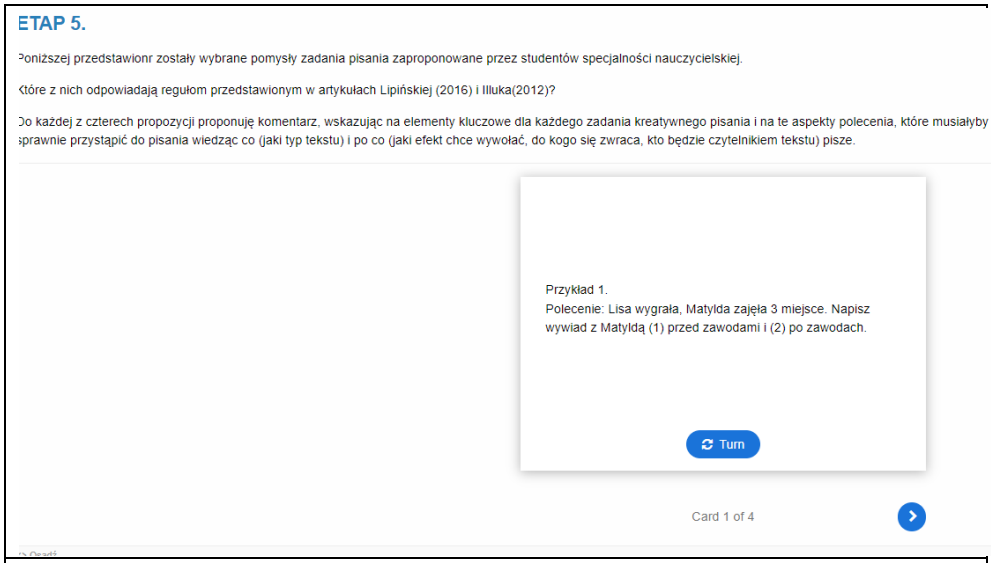
Plusieurs activités sur Moodle, de par leur format ouvert, invitent l'apprenant à une réponse libre qui peut être ensuite confrontée à celle de l'enseignant. Nous apprécions cette possibilité qui permet non seulement d'accompagner la réflexion de l'apprenant, mais aussi de situer sa réponse dans un contexte plus large où des idées complémentaires viennent enrichir son discours. Dans notre cours, plusieurs solutions techniques sont adoptées pour atteindre cet effet.

- Les *dialogue cards*, une activité H5p, qui permettent de placer la question au recto de la carte et la réponse ou un commentaire au verso ;

[4] Rappelons que tous les contenus du cours ont été rédigés en polonais. Les passages choisis pour illustrer la présentation du cours ont été traduits en français pour les besoins du présent article.

- Une série de diapositives (réalisées dans l'application canva.org) présentant d'abord les questions, ensuite nos réponses ;
- Les notes incluses dans le fichier Word que nous publions à la fin du scénario de la leçon ;
- Le feedback sur les questions ouvertes, qui synthétise les objectifs de l'activité du point de vue de l'apport pour la réflexion personnelle de l'apprenant.

Nous présentons ci-dessous une idée pédagogique que nous utilisons dans notre cours et qui consiste à concevoir des activités dialogiques à l'aide du plugin H5p et notamment de l'activité dite *dialogue, cards*.



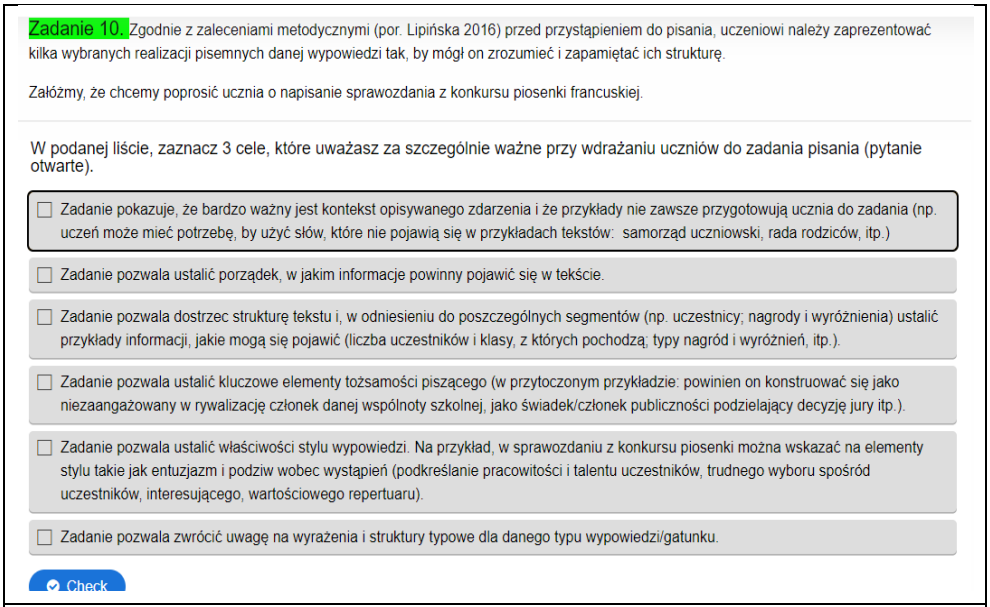
Traduction des données présentées dans la figure 2.
CONSIGNE : Voici quelques consignes pour initier les tâches d'expression écrite, proposées par les enseignants débutants. Lesquelles d'entre elles répondent aux règles présentées dans les articles de Lipińska (2016) et d'Illuk (2012) ?
Exemple de la consigne proposée par un étudiant (au recto de la carte) : *Écris ce que tu penses du comportement de Lisa.*
Commentaire fourni par l'enseignante (au verso de la carte) : Le but communicatif de la tâche n'est pas précisé. Ni le destinataire de ce texte ni la forme de l'énoncé ne sont spécifiés. En lisant la consigne, l'apprenant devrait pouvoir déterminer les paramètres de la situation : à qui s'adresse l'auteur ? Quelle est la relation entre l'auteur et le lecteur ? Dans une formulation aussi succincte, la consigne peut entraîner une réponse courte et évasive. La liberté de la réalisation qu'elle entraine ne permet pas de proposer les critères d'évaluation clairs. Par conséquent, le jugement formulé par l'élève ne pourra pas faire l'objet d'une évaluation de fond.

Figure 2. Capture d'écran du cours présentant l'activité du type *dialogue, cards*

L'exercice présenté (fig. 5) a pour but d'évaluer les idées des étudiants-futurs enseignants, en tenant compte des recommandations énoncées dans les articles de référence que les étudiants ont lus lors de la première étape du scénario.

Pour concevoir cette activité, nous nous sommes appuyés sur les réponses des étudiants ayant réalisé un scénario semblable en présentiel l'année dernière. En cliquant sur le bouton « turn », l'apprenant qui réalise cette activité sur Moodle est redirigé vers notre commentaire dans lequel nous évaluons la qualité de la proposition. Il est important de souligner que cette activité invite le lecteur à une réflexion critique sur deux perspectives croisées : celle d'un enseignant débutant (proposition présentée sur le recto) et celle de l'enseignant expérimenté (commentaire au verso de la carte). Nous apprécions particulièrement cet aspect dialogique du scénario qui laisse place à d'autres voix encore – celles des étudiants à qui ces activités sont proposées et de leurs enseignants.

L'activité suivante propose un feedback sous forme de commentaire ouvert, rappelant les recommandations didactiques exposées dans l'article scientifique qui sert de référence aux étudiants.



Traduction des données présentées dans la fig. 3.
CONSIGNE : Selon les recommandations didactiques (cf. Lipińska, 2016), avant que les élèves commencent à rédiger un travail écrit, il est nécessaire de leur présenter des modèles génériques du texte qui les orienteront dans leur production.
Mettons que nous voulons demander à l'élève de rédiger un compte rendu d'un concours de la chanson française organisé dans son école. Dans la liste fournie, indique trois objectifs que tu considères comme particulièrement importants lors de l'introduction des élèves à la tâche d'écriture, une étape qui sert à présenter la structure et la forme du discours attendu (question ouverte).

- La tâche montre que le contexte de l'événement décrit est très important et que les modèles fournis ne préparent pas toujours l'élève à la tâche écrite (par exemple, l'élève peut avoir besoin d'utiliser des mots qui ne figurent pas dans les modèles, tels que le conseil des élèves, le conseil des parents, etc.).
- La tâche permet d'établir l'ordre dans lequel les informations doivent apparaître dans le texte.
- La tâche permet de percevoir la structure du texte et, en référence à chacun de ses segments, de proposer les informations qui peuvent y apparaître.
- La tâche permet de déterminer les éléments clés de l'identité de l'auteur (dans l'exemple cité, il devrait se construire en tant que membre impartial de la communauté scolaire, en tant que témoin/membre du public partageant la décision du jury, etc.).
- La tâche permet de déterminer les caractéristiques du style d'expression. Par exemple, dans un compte rendu d'un concours de chansons, on peut insister sur l'expression de l'enthousiasme et de l'admiration pour les performances des participants.
- La tâche permet de prêter attention aux expressions et aux structures typiques du genre en question.

Commentaire final (le même pour toutes les réponses choisies) :
Tous les éléments de la tâche mentionnés dans la liste sont utiles pour sensibiliser l'élève à la spécificité générique de l'expression écrite qu'il doit préparer. Tu as relevé trois aspects qui sont importants pour toi. Sur quoi repose ton choix ? Par exemple, penses-tu que ce sont des questions qui sont négligées dans l'enseignement scolaire ? Ou bien penses-tu que ces aspects de l'expression écrite sont particulièrement difficiles à maîtriser ?

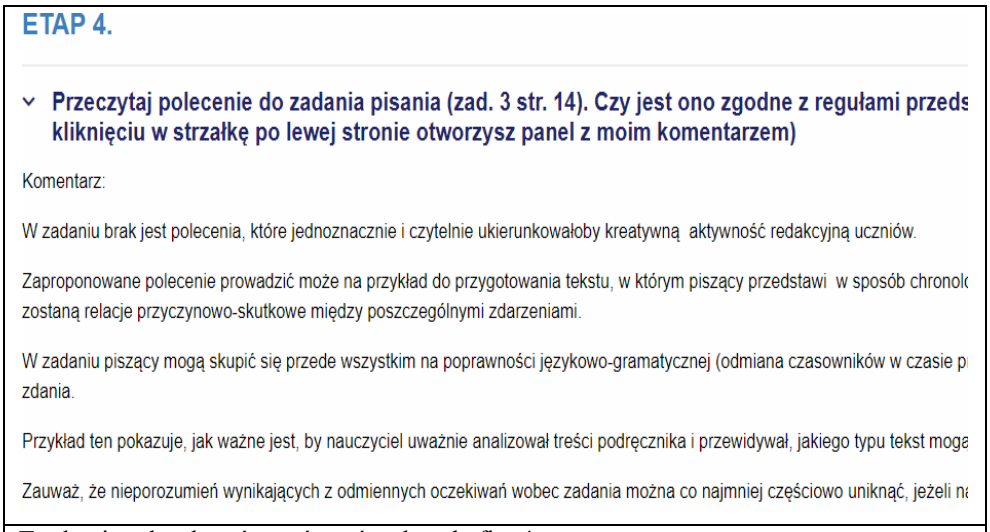
Figure 3. Capture d'écran du cours présentant l'activité du type *dialogue, cards*

La rétroactivité offerte sur la plateforme Moodle ouvre un espace supplémentaire pour modeler la pensée scientifique et pour accompagner l'apprenant dans l'élaboration de cette forme de réflexion didactique.

d) Ressources écrites qui complètent les notes individuelles prises en cours et qui rendent la révision plus efficace

Plusieurs fonctionnalités dans le système de gestion de l'apprentissage Moodle permettent de présenter les données textuelles dans une mise en forme adaptée au site, conçue pour rendre la lecture des textes assez longs, composés de 2-3 paragraphes, aisée et fluide.

Nous avons exploité cette possibilité pour concevoir des séquences d'exposition, dans lesquelles nous résumons les idées de recherche contenues dans les textes scientifiques. Notre objectif est alors de fournir un modèle du raisonnement scientifique et d'expliquer les idées présentées dans les articles. La synthèse fournie propose également un modèle de la lecture et de l'analyse des contenus des textes de référence, modèle auquel nous souhaiter initier nos étudiants. Nous présentons ci-dessous la capture d'écran pour illustrer la mise en page des notes de cours.



Traduction des données présentées dans la fig. 4.
CONSIGNE : Lis la consigne pour la tâche 3, page 14 du manuel. Est-elle conforme aux règles présentées dans les articles de Lipińska (2016) et Illuk (2012) ? Réfléchis et note ta réponse. Ensuite, clique dans la flèche à droite pour ouvrir le commentaire.
Commentaire : La tâche ne comporte pas de consigne qui oriente de manière claire et explicite l'activité écrite des élèves. La consigne proposée peut conduire, par exemple, à la préparation d'un texte où l'auteur présente de manière chronologique des actions spécifiques, mais celles-ci ne construiront pas nécessairement une histoire exposant les relations de cause à effet entre les événements individuels. Dans leur manière de réaliser la tâche demandée, les apprenants peuvent se concentrer principalement sur la correction linguistique et grammaticale (conjugaison des verbes au passé) et créer un texte de six phrases qui reprendront les éléments fournis par manuel et seront complétées de façon très sommaire.
Cet exemple montre que l'enseignant doit analyser attentivement le contenu du manuel et anticiper les choix et les conduites des apprenants. Remarquez que les malentendus dus aux attentes différentes à l'égard de la tâche peuvent être évités, au moins en partie, si l'enseignant fournit également les critères d'évaluation de la tâche au moment de sa présentation.

Figure 4. Capture d'écran du cours présentant la mise en forme du commentaire dont la fonction est d'insister sur les principes didactiques essentiels

Les activités proposées constituent une séquence destinée au travail en semi-autonomie. Cette démarche initie également une réflexion sur l'élaboration d'une ressource plus complète qui s'apparenterait davantage à un manuel académique. Il est ensuite possible de l'enrichir par des activités de compréhension et de mise en pratique pour les savoirs et les savoir-faire abordés.

Bilan

Notre objectif a été de réfléchir à l'hybridation d'un cours académique qui vise à la fois l'acquisition de connaissances théoriques et le développement de

savoir-faire pratiques chez les futurs enseignants de langue. Dans notre cours, les activités en ligne accordent une place prépondérante à la réflexion scientifique et offrent une initiation au discours académique. Elles apportent également un soutien et un accompagnement pour le travail individuel. Cette hybridation est particulièrement avantageuse pour l'enseignant, car elle le pousse à structurer davantage ses cours et à expliciter ses enseignements. La numérisation de ses cours facilite leurs modifications et leurs améliorations successives.

Dans le cas d'un cours ouvert, la numérisation des ressources encourage également les échanges avec d'autres enseignants qui peuvent compléter les activités proposées ou suggérer de nouvelles pistes d'exploration. Ainsi, la réflexion sur l'hybridation est complétée par celle sur les démarches pédagogiques qui permettent d'ouvrir son cours et de partager avec d'autres professeurs sa conception de la formation ainsi que les stratégies d'enseignement destinées à atteindre les objectifs visés.

Dans la continuité du travail entrepris, nous souhaitons rendre compte de l'orientation que devrait prendre l'élaboration des ressources libres destinées à être utilisées dans la formation des futurs enseignants. Nous envisageons d'observer les choix des utilisateurs – en l'occurrence, les professeurs universitaires responsables de cours similaires – concernant l'adoption et le remixage des ressources de notre cours. Cela nous permettra de donner une forme plus aboutie et cohérente aux séquences construites, se rapprochant d'un manuel virtuel et reflétant davantage les préoccupations de la communauté glottodidactique polonophone (Karpińska-Musiał et Orchowska, 2019 ; Jaworska, 2020 ; Orchowska, 2023).

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