ESLG College

DEEP LEARNING POLICY

Prishtina, 15.01.2023

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1. INTRODUCTION

Deep Learning is a rapidly evolving field that has the potential to revolutionize many areas of research and industry. In order to ensure that our students have the best opportunity to develop skills and knowledge in this field, it is important that the university establishes a clear policy that boosts the deep learning of students.

Deep learning is a complex process that engages multiple regions of the brain. The primary areas involved in deep learning include the hippocampus, prefrontal cortex, and the neocortex. The hippocampus is responsible for memory formation and retrieval, while the prefrontal cortex is involved in attention, decision-making, and executive function. The neocortex, which is the outermost layer of the brain, plays a critical role in the processing of visual, auditory, and other sensory information. Additionally, the cerebellum, which is located at the back of the brain, plays a role in motor coordination and balance, as well as cognitive functions such as attention, working memory, and language. All these areas of the brain work together in deep learning, allowing for the integration and organization of information, and the formation of new neural connections.

2. GOALS OF THE POLICY

The primary goals of this policy are to:

- Encourage and support the integration of deep learning into the curriculum across a wide range of disciplines

- Provide access to state-of-the-art deep learning resources and infrastructure for students

- Promote hands-on learning and practical experience through real-world projects and industry collaborations

- Foster a culture of experimentation, innovation, and risk-taking among students

3. CURRICULUM DEVELOPMENT

The College will offer a range of deep learning courses at the undergraduate and graduate level, covering both the theoretical foundations and practical applications of the field.

These courses will be developed in consultation with experts in the field and will be reviewed and updated on a regular basis to ensure they remain current and relevant.

The College will also encourage the integration of deep learning into existing courses across a range of disciplines, such as computer science, engineering, biology, and economics.

4. RESOURCES AND INFRASTRUCTURE

College ESLG will provide access to state-of-the-art deep learning resources and infrastructure, such as powerful computing clusters, specialized software and libraries, and large datasets.

These resources will be made available to students for research and coursework purposes.

The university will also establish partnerships and collaborations with industry and other organizations to provide access to additional resources and expertise.

5. HAND-ON AND PRATICAL EXPERIENCE

The College ESLG will provide opportunities for students to work on real-world projects and apply deep learning techniques to solve real-world problems.

The College ESLG will also establish industry collaborations to provide students with internships, co-op opportunities, and other forms of experiential learning.

The College ESLG will encourage and support the participation of students in hackathons, competitions, and other events that promote hands-on learning and practical experience.

6. CULTURE OF INNOVATION AND RISK-TAKING

College ESLG will create an environment that encourages experimentation, innovation, and risk-taking among students.

College ESLG will provide funding and other resources to support student-led projects and initiatives in deep learning.

College ESLG will recognize and reward outstanding achievements by students in deep learning.

7. IMPLEMENTATION AND REVIEW

This policy will be implemented by the relevant academic departments and research centers, in consultation with the Office of Student Affairs and the Office of Information Technology.

The policy will be reviewed on an annual basis by a committee composed of representatives from the real estate studies department, research centers, the Office of Student Affairs, and the Office of Information Technology, to ensure it remains current and effective.

This policy is intended to provide a framework for the College's efforts to integrate deep learning into real estate studies, but it is not meant to be exhaustive or prescriptive. The university will continue to adapt and evolve its approach as the field of deep learning evolves and new opportunities and challenges arise.

8. HOW TO BOOST HIPPOCAMPUS IN COLLEGE'S ESLG TEACHING

The following techniques should be undertaken by the academic staff of College ESLG:

- Incorporating spaced repetition and elaboration techniques: Studies have shown that spaced repetition and elaboration techniques, such as flashcards and summarizing information, can improve memory and enhance the functioning of the hippocampus.

- Encouraging physical activity: Regular physical activity has been shown to increase the size of the hippocampus and improve memory function.

- Incorporating mindfulness practices: Mindfulness practices, such as meditation and yoga, have been shown to improve the function of the hippocampus and overall cognitive functioning.

- Promoting social engagement: Social engagement and a sense of belonging have been linked to increased hippocampus size and function.

- Using technology-based interventions: Virtual reality and computer-based programs have been shown to improve memory and enhance the functioning of the hippocampus.

- Provide a stimulating environment: Creating an environment that promotes exploration, discovery, and creativity can lead to new neuron growth and improve memory function.

- Provide opportunities for personal interests: Encourage students to explore their personal interests and hobbies, which will lead to a more active hippocampus

It is important to note that these techniques should be used in conjunction with traditional teaching methods and should be tailored to the specific needs and learning styles of the students.

9. HOW TO BOOST PRE-FRONTAL CORTEX IN COLLEGE'S ESLG TEACHING

The following techniques should be undertaken by the academic staff of College ESLG:

- Incorporate executive function tasks: Executive function tasks such as working memory and problem-solving exercises have been shown to activate the prefrontal cortex. These can be incorporated into university teaching through activities such as group discussions, case studies, and problem-based learning.

- Encourage active learning: Active learning strategies such as inquiry-based learning and hands-on activities have been shown to engage the prefrontal cortex and improve learning outcomes.

- Use visual aids: Visual aids such as images, videos, and diagrams have been shown to activate the prefrontal cortex and improve learning outcomes.

- Use metacognitive strategies: Metacognitive strategies such as self-reflection and self-evaluation have been shown to activate the prefrontal cortex and improve learning outcomes.

- Provide opportunities for choice and autonomy: Giving students the opportunity to choose the topics they want to learn, how they want to learn it, and how they want to demonstrate their understanding, can increase the involvement of the prefrontal cortex.

- Encourage attention and focus: Techniques such as mindfulness, meditation and regular breaks can help students to focus better and increase their attention span, which can also stimulate the prefrontal cortex.

10. HOW TO BOOST NEOCORTEX IN COLLEGE'S ESLG TEACHING

The following techniques should be undertaken by the academic staff of College ESLG:

- There are several techniques that can be used to boost neocortex function during university teaching:

- Encourage active learning: Active learning techniques, such as problem-based learning and inquiry-based learning, can help to engage the neocortex and promote deeper understanding of course material.

- Promote critical thinking: Encourage students to think critically and analyze information, rather than simply memorizing facts. This can help to activate the neocortex and improve learning outcomes.

- Use multimedia resources: Incorporating multimedia resources, such as videos, images, and animations, can help to engage multiple senses and stimulate the neocortex.

- Facilitate group work: Collaborative learning activities, such as group projects, can help to activate the neocortex and improve learning outcomes.

- Use real-world examples: Real-world examples and case studies can help to make course material more relatable and relevant, which can boost neocortex function and improve learning outcomes.

- Provide feedback and reflection opportunities: Providing timely and specific feedback, and opportunities for self-reflection and reflection can help to strengthen the neural pathways associated with the neocortex.

- Encourage interdisciplinary approach: Encouraging students to apply the knowledge and skills they are learning in different disciplines can lead to greater elaboration, integration, and generalization of the material, which will activate the neocortex.

It's important to note that while these techniques can help to boost neocortex function, they should be used in conjunction with other teaching methods and tailored to the specific needs and learning styles of individual students.

11. HOW TO DEAL WITH AMYGDALA REACTION DURING COLLEGE'S ESLG TEACHING

The amygdala plays a role in deep learning by processing emotional information and helping to form emotional memories. It is activated during experiences that are emotionally significant, such as those that are pleasurable or aversive. It helps to associate these emotional experiences with the information being learned, which can enhance memory for that information. However, if the emotional response is too intense, it can interfere with memory formation and deep learning. Therefore, it is important to create a positive and supportive learning environment that can help to reduce stress and negative emotions while still promoting emotional engagement with the material being learned. Techniques such as mindfulness, self-compassion and relationship building can be used to regulate the emotional response of the students.

The following techniques should be undertaken by the academic staff of College ESLG:

- Encourage interdisciplinary approach: Encouraging students to apply the knowledge and skills they are learning in different disciplines can lead to greater elaboration, integration, and generalization of the material, which will activate the neocortex.

- Incorporating Emotionally Engaging Materials: Incorporating materials that elicit positive emotions can help activate the amygdala and increase engagement in learning. This can include videos, images, and real-life examples that are relevant and interesting to students.

- Creating a Positive Classroom Environment: A positive classroom environment can help reduce stress and promote positive emotions, which can boost the amygdala. This can include encouraging positive interactions among students, providing opportunities for social connections, and fostering a sense of belonging.

- Using Mindfulness Techniques: Mindfulness techniques such as meditation, yoga, and deep breathing can help reduce stress and promote positive emotions, which can boost the amygdala.

- Encouraging Reflection: Encouraging students to reflect on their learning experiences and emotions can help them process and integrate the information, which can boost the amygdala. This can include journaling, self-reflection activities, and group discussions.

- Providing Positive Feedback: Providing positive feedback and recognition for student achievements can help boost the amygdala by promoting positive emotions and a sense of self-worth.

- Incorporating Physical Activity: Incorporating physical activity into the classroom can help boost the amygdala by promoting positive emotions and reducing stress.

- Encourage Creative and Critical Thinking: Encouraging creative and critical thinking can help boost the amygdala by promoting positive emotions and a sense of accomplishment.

Please note that this list is not exhaustive and it is important to consult with experts in the field of neuroscience and education to ensure the best and safe practice.

12. COGNITIVE LOAD GUIDE AT COLLEGE'S ESLG TEACHING

Cognitive load refers to the amount of mental effort required to process information during learning. In university studies, cognitive load can be high due to the large amount of information that students are expected to learn and remember. This can lead to decreased learning outcomes and increased stress and anxiety among students. Therefore, reducing cognitive load in university studies is an important topic of research.

One way to reduce cognitive load is through the use of multimedia, such as videos and animations, in teaching materials. Studies have shown that incorporating multimedia can lead to improved learning outcomes and increased engagement among students (Kirschner, Sweller, & Clark, 2006). Another study found that using videos to supplement text-based instruction resulted in better performance on a task requiring the transfer of knowledge, indicating that multimedia can help reduce cognitive load by providing multiple ways to represent information (**Mayer & Moreno, 2003**).

Another approach to reducing cognitive load is through the use of worked examples. Worked examples are step-by-step solutions to problems that demonstrate how to solve similar problems. Research has found that worked examples can lead to better learning outcomes and reduced cognitive load compared to traditional problem-solving methods (Van Merrienboer, 1997; Sweller, Ayres, & Kalyuga, 2011).

Additionally, cognitive load can be reduced through the use of spaced practice, which involves spreading out the time between learning sessions instead of cramming all the

information into a single session. Research has shown that spacing practice leads to better long-term retention of information compared to massed practice (Cepeda, Pashler, Vul, Wixted, & Rohrer, 2006).

Finally, self-explanation, which involves encouraging students to explain how they solve problems and understand concepts, has been shown to lead to improved learning outcomes and reduce cognitive load (Chi, Siler, Jeong, Yamauchi, & Hausmann, 2001).

In conclusion, there are several ways to reduce cognitive load in university studies, such as through the use of multimedia, worked examples, spaced practice, and self-explanation. These approaches can lead to improved learning outcomes and reduced stress and anxiety among students. However, it is worth noting that more research is needed to determine the best way to implement these strategies in the classroom.

The following techniques should be undertaken by the academic staff of College ESLG:

- Chunking: Breaking down complex information into smaller, more manageable chunks can help reduce cognitive load. This can be done by organizing information into categories, creating visual aids, or using mnemonic devices.

- Simplifying language: Using simple and clear language can help reduce cognitive load by making it easier for students to understand and retain information.

- Using examples and analogies: Providing relatable examples and analogies can help students better understand and remember new information.

- Active learning: Encouraging students to actively engage with the material through activities such as discussions, group work, and problem-solving can help reduce cognitive load by making the learning process more interactive and engaging.

- Self-explanation: Encouraging students to explain the material in their own words can help them better understand and retain the information.

- Feedback: Providing students with immediate feedback on their understanding of the material can help them identify areas where they need to focus their attention, reducing cognitive load by preventing frustration from confusion.

- Summarizing and reviewing: Regularly summarizing and reviewing the material helps students to recall what they have learned and solidify their understanding, reducing cognitive load by making the information more salient.

- Scaffolding: Gradually building up complexity in the material can help students to better understand and retain the information, reducing cognitive load by preventing them from being overwhelmed by too much information at once.

13. BOOSTING EMOTIONAL STATE OF ESLG'S STUDENTS

Emotional state has been found to play a significant role in learning and cognitive performance. Research has shown that students who are in a positive emotional state are more likely to engage in deep learning, retain information better, and perform better academically.

One study by Pekrun et al. (2009) found that students who experienced positive emotions during a lecture retained more information and had a better understanding of the material compared to those who experienced negative emotions. Another study by Fredrickson and Losada (2005) found that positive emotions promote a more expansive cognitive style, allowing for deeper learning and better problem-solving abilities.

To improve the emotional state of university students, several strategies have been proposed in the literature. For example, mindfulness practices have been found to be effective in reducing stress and promoting positive emotions among university students. A study by Burke and Barnes-Holmes (2010) found that mindfulness practices helped university students to feel more focused and less anxious, resulting in improved academic performance.

Another strategy that has been found to be effective in improving the emotional state of university students is self-compassion. A study by Neff (2003) found that self-compassionate students had higher levels of emotional well-being and were less likely to experience burnout compared to those who lacked self-compassion.

Social support is also an important factor in improving the emotional state of university students. A study by Sarason et al. (1990) found that students who had a strong sense of social support had better academic performance and were less likely to experience stress and anxiety.

In conclusion, the emotional state of university students plays a significant role in their ability to engage in deep learning. Strategies such as mindfulness, self-compassion, and social support can help to improve the emotional state of university students, resulting in better academic performance and overall well-being. Further research is needed to investigate the most effective ways to implement these strategies in a university setting.

The following teaching strategies should be used to boost the emotional state of students at College ESLG:

EXTRINSIC MOTIVATION

- Setting clear and measurable goals: Providing students with specific and challenging goals can increase their motivation to achieve them.

- Providing rewards: Offering tangible or intangible rewards for completing tasks or achieving goals can increase students' motivation to engage in deep learning.

- Providing feedback: Giving students feedback on their performance can help them identify areas where they need to improve and increase their motivation to succeed.

- Providing choice: Giving students the opportunity to choose their own learning activities or projects can increase their motivation by giving them a sense of autonomy.

- Providing a sense of purpose: Helping students understand the relevance and importance of what they are learning can increase their motivation to engage in deep learning.

- Collaboration: Encouraging students to work together on projects or tasks can increase their motivation as they feel a sense of belonging and can share their knowledge and skills.

- Gamification: Using game-like elements, such as points, badges, and leaderboards, in the learning process can increase students' motivation to engage and complete tasks.

- Making the learning process more interactive: Engaging students in discussions, debates, and group activities can increase their motivation as they feel more connected to the material.

- Incorporating real-world scenarios: Using real-world examples and scenarios can increase students' motivation as they can relate to the material better and see its application in their daily lives.

- Encourage self-reflection: Allowing students to reflect on their own learning process and progress can help them understand their strengths and weaknesses, and increase their motivation to improve.

INTRINSIC MOTIVATION

- Autonomy: Give students the freedom to choose their own learning paths, projects and assignments.

- Mastery: Provide opportunities for students to develop their skills and improve their performance over time.

- Purpose: Connect the learning to the students' personal values and interests, and show how it aligns with their future goals.

- Feedback: Provide regular and constructive feedback on student's performance, so they can see their progress and identify areas for improvement.

- Challenge: Present students with challenging tasks that stretch their abilities and promote a sense of accomplishment.

- Group work: Encourage students to collaborate on projects and assignments. It can foster a sense of belonging and increase the enjoyment of the learning experience.

- Self-reflection: Encourage students to think about their own learning process and how they can improve it, which can foster a sense of self-efficacy.

- Gamification: Incorporate elements of game design, such as points, badges, and leaderboards, to increase motivation and engagement.

- Personalization: Tailor instruction and assessments to meet the individual needs and learning styles of students.

- Goal setting: Encourage students to set specific and challenging goals for themselves and to track their progress towards achieving those goals

14. SELF-IMPROVEMENT OF ESLG'S STUDENTS

Self-improvement is an important aspect of deep learning for university students. Extrinsic and intrinsic motivation, attention flow, and increased curiosity are some of the key factors that have been found to influence self-improvement in the context of deep learning.

Extrinsic motivation refers to external factors that drive behavior, such as rewards or punishment. Research has shown that extrinsic motivation can be an effective tool for encouraging students to engage in deep learning. For example, a study by Deci, Koestner, and Ryan (1999) found that offering students tangible rewards for completing a learning task led to greater engagement and performance compared to when no rewards were offered.

Intrinsic motivation, on the other hand, refers to internal factors that drive behavior, such as interest or enjoyment. Research has shown that intrinsic motivation is a key factor in deep learning, as it leads to greater engagement and performance. A study by Vansteenkiste, Simons, Lens, Sheldon, and Deci (2004) found that students who were intrinsically motivated to learn performed better on a learning task compared to those who were not.

15. ATTENTION FLOW OF ESLG'S STUDENTS

Attention flow is another important aspect of deep learning. Research has shown that attention flow can be improved by reducing distractions and increasing focus. A study by Rosen et al. (2013) found that students who were able to focus their attention on the task at hand performed better on a learning task compared to those who were easily distracted.

Increased curiosity is another factor that can improve deep learning. Research has shown that students who are curious about a topic are more likely to engage in deep learning. A study by

Hidi and Renninger (2006) found that students who were curious about a topic performed better on a learning task compared to those who were not.

Overall, the literature suggests that extrinsic and intrinsic motivation, attention flow, and increased curiosity are key factors that can improve self-improvement in the context of deep learning for university students. To support students to have these qualities, universities should create an environment that fosters curiosity, provide opportunities for students to experience flow, design curricula and learning activities that align with students' interests, and provide incentives or rewards for students who engage in deep learning.

The following teaching strategies should be used to regulate attention of students at College ESLG:

- Mindfulness and meditation: Incorporating mindfulness practices, such as meditation, can help students regulate their attention and focus on the present moment. This can improve their ability to sustain attention on learning tasks and reduce distractions.

- Time management: Teaching students effective time management skills, such as prioritizing tasks and setting realistic goals, can help them regulate their attention and stay on track with their learning.

- Breaks and physical activity: Encouraging students to take regular breaks and engage in physical activity can help them regulate their attention by providing an opportunity to rest and refocus.

- Chunking information: Breaking down complex information into smaller chunks can make it more manageable for students to process and retain, which can improve their attention flow during learning.

- Eliminating distractions: Creating a conducive learning environment by eliminating distractions, such as notifications and background noise, can help students stay focused during deep learning.

- Self-reflection: Encouraging students to reflect on their learning process can help them become more aware of their attention flow and identify strategies to improve it.

- Goal setting: Setting clear and specific goals for learning can help students stay focused on their learning task and increase intrinsic motivation.

- Providing feedback: Giving students feedback on their learning performance can help them stay motivated, track their progress and identify areas for improvement.

- Self-determination: Promoting self-determination by providing autonomy, choice and relatedness can help students stay motivated and engaged in their learning process.

- Group work: Collaborating with peers on learning tasks can help students stay engaged and motivated, as well as providing opportunities for social support and feedback.

16. CURIOSITY REGULATION OF ESLG'S STUDENTS

The following teaching strategies should be used to attract curiosity of students at College ESLG:

- Group work: Collaborating with peers on learning tasks can help students stay engaged and motivated, as well as providing opportunities for social support and feedback.

- Encourage students to explore new topics and subjects: Giving students the freedom to explore new topics and subjects that they are interested in can help to increase their curiosity. This can be done by providing students with a wide range of elective courses or by encouraging them to take on independent research projects.

- Provide opportunities for hands-on learning: Hands-on learning activities, such as laboratory experiments, field trips, and group projects, can help to increase students' curiosity by allowing them to actively engage with the material and see the real-world applications of what they are learning.

- Use inquiry-based teaching methods: Inquiry-based teaching methods, such as the scientific method and problem-based learning, can help to increase students' curiosity by encouraging them to ask questions and think critically about the material.

- Encourage critical thinking: Encouraging students to think critically about the material and to question assumptions can help to increase their curiosity by challenging them to consider different perspectives and to seek out new information.

- Provide opportunities for real-world experience: Giving students the opportunity to apply their learning in real-world settings, such as internships, service-learning projects, or study abroad programs, can help to increase their curiosity by providing them with a deeper understanding of the material and its relevance to their lives.

- Use stories, games, and other interactive activities: Using interactive activities such as stories, games, and simulations, can help to increase students' curiosity by providing them with an engaging and interactive learning experience.

- Provide Positive feedback and recognition: Providing positive feedback and recognition to students when they show curiosity will encourage them to continue to be curious and to engage more in learning.

17. CREATING AFFECTIVE ENVIRONMENT FOR ESLG STUDENTS

The following teaching strategies should be used to create affective environment for students at College ESLG:

- Setting clear and achievable learning objectives: By setting clear and measurable goals, students are able to understand what they are working towards and stay motivated to achieve them.

- Creating a positive classroom culture: Creating a positive and inclusive classroom culture can foster a sense of belonging and engagement among students. This can be achieved through activities such as group work, peer feedback, and class discussions.

- Incorporating real-world examples and applications: By connecting the material to the students' interests and experiences, it can be more relevant and engaging for them.

- Using a variety of teaching methods: Incorporating a variety of teaching methods such as visual aids, hands-on activities, and interactive media can help to keep students engaged and motivated.

- Encouraging self-reflection and self-evaluation: Allowing students to reflect on their own learning process and progress can help to increase their intrinsic motivation.

- Encouraging collaboration and teamwork: Collaborative learning can lead to increased motivation and engagement among students, as they can learn from each other and share ideas.

- Providing feedback and recognition: Providing regular feedback and recognizing students' achievements can help to increase their motivation and sense of accomplishment.

- Using technology: Incorporating technology in the classroom can make learning more interactive and engaging for students.

- Creating a comfortable and stimulating learning environment: Creating a comfortable and stimulating learning environment, such as a well-lit, quiet, and well-organized room, can help to reduce distractions and increase focus and concentration.

- Highlighting the importance of the subject matter: Highlighting the importance of the subject matter, such as how it relates to their future career or how it can improve their lives, can increase students' intrinsic motivation to learn.

18. BELONGING AND CONNECTEDNESS OF ESLG STUDENTS

The following teaching strategies should be used to boost the sense of belonging and connectedness of students at College ESLG:

- Encourage group work and collaboration: Assign group projects, case studies, or group presentations to encourage students to work together and share ideas. This can help students feel a sense of belonging within the class and to their peers.

- Foster a sense of community: Create opportunities for students to get to know each other, such as ice-breaker activities, social events, or study groups. This can help students feel more connected to their classmates and to the university community.

- Use personalized instruction: Use students' names, share personal anecdotes, and use examples that are relevant to the students' lives. This can help students feel more connected to the material and to the instructor.

- Incorporate student feedback: Encourage students to provide feedback on the course content, teaching methods, and assignments. This can help students feel more invested in the course and more connected to the instructor.

- Encourage student engagement: Encourage students to participate in class discussions, ask questions, and share their thoughts and ideas. This can help students feel more connected to the material and to the class.

- Provide opportunities for mentoring: Encourage students to connect with experienced students or faculty members who can provide guidance and support. This can help students feel more connected to the university community and to their peers.

- Utilize technology and social media: Encourage students to connect with each other through technology and social media. This can help students feel more connected to their peers and to the university community.

19. NURTURING STUDENT-PROFESSOR RELATIONSHIP

The following teaching strategies should be used to nurture the student-professor relationship at College ESLG:

- Encourage open communication: Encourage students to communicate with their professors, both inside and outside the classroom. This can be achieved through office hours, email, and other forms of electronic communication.

- Provide opportunities for interaction: Provide opportunities for students to interact with their professors through group projects, collaborative learning, and other interactive activities. This can help to build a sense of community and belonging among students.

- Foster a positive classroom environment: Create a positive and supportive classroom environment that is conducive to deep learning. This can be achieved through a clear and well-organized curriculum, clear expectations, and a positive attitude.

- Encourage active learning: Encourage active learning by providing opportunities for students to engage in hands-on activities, discussions, and other forms of active participation. This can help to increase students' sense of engagement and motivation.

- Provide mentorship opportunities: Provide mentorship opportunities to students by pairing them with experienced professors who can offer guidance and support. This can help to foster a deeper sense of connectedness between students and their professors.

- Create opportunities for feedback: Create opportunities for students to give feedback to their professors on their teaching methods, course content, and other aspects of the class. This can help to improve the quality of the class and the student-professor relationship.

- Encourage students to take initiative: Encourage students to take initiative in their learning by providing opportunities for them to pursue their own interests and passions. This can help to increase students' intrinsic motivation and sense of ownership over their learning.