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STEAME ACADEMY
TEACHING FACILITATION LEARNING & CREATIVITY PLAN (L&C PLAN) - LEVEL 1
STUDENT TEACHERS: THE WORLD OF GAMES

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1. Overview

Title	The world of games
Driving Question or Topic	1. How do games influence society, and what role can they play in education? 2. How can understanding the world of games enhance STEAME education and foster creativity in students?
Ages, Grades, …	16-18 10^{th} to 12^{th} grade
Duration, Timeline, Activities	*Number of learning hours* *Timeline/frame, calendar* *Number of activities*
Curriculum Alignment	*Missing*
Contributors, Partners	University faculty, game designers, educational technology experts
Abstract - Synopsis	This curriculum aims to explore the cultural, educational, and societal impact of games. Students will delve into the history of games, analyze their influence, and create educational games to address real-world issues. Through hands-on activities and collaborative projects, students will develop critical thinking, problem-solving, and creativity skills while gaining a deeper understanding of the world of games.
References, Acknowledgements	

2. STEAME ACADEMY Framework*

Teachers' Cooperation	*Teacher 1 cooperation with Teacher 2 in case of learning elements involving two different disciplines and specific cooperation of mentoring by service teachers for student teachers* *Work plan and steps with clear goals and activities between service and student teachers*
STEAME in Life (SiL) Organization	*Meeting with business representatives/Applications in real world* *Entrepreneurship – STEAME in Life (SiL) Days*

Action Plan Formulation	*Reference to the Stages and the Steps of the STEAME ACADEMY Framework for Project-based STEAME learning (Action Plan Formulation)*

[*] *under development the final elements of the framework*

3. Objectives and Methodologies

Learning Goals and Objectives	**Knowledge:** • Understand the history and evolution of gaming from traditional to digital formats and recognize the cultural significance of games in different societies and time periods. • Identify various genres of games and their characteristics, as well as key concepts in game design, such as mechanics, dynamics, aesthetics, and the technological advancements that have shaped the gaming industry. • Recognize the educational potential of games in enhancing STEAME learning and analyze their impact on society and individual behavior. • Conduct primary and secondary research on topics related to games and gaming culture to deepen understanding and inform game design decisions. **Skills:** • Apply principles of game design to create engaging and educational game experiences, utilizing digital tools and technologies for game development and presentation. • Design and develop basic game prototypes, demonstrating proficiency in critical thinking and problem-solving through game-based learning activities. • Collaborate effectively with peers to design and develop educational games, evaluating their potential to teach STEAME concepts and skills. • Utilize critical thinking and problem-solving skills to address challenges in game design and implementation, adapting to changes in gaming technologies and trends. **Attitudes:** • Appreciate the value of play and exploration in learning and creativity, embracing diverse gaming experiences and perspectives. • Engage in reflective practice to evaluate the effectiveness of game-based learning strategies and demonstrate openness to interdisciplinary perspectives in understanding the world of games. • Collaborate effectively with peers to brainstorm ideas, iterate on designs, and solve problems, while reflecting on the ethical considerations of game content and its impact on players and society. • Foster a growth mindset towards learning and innovation in game design and education, adapting to changes in the gaming landscape and exploring new gaming technologies and trends.
Learning Outcomes and expected Results	**Learning Outcomes:** Students will gain a comprehensive understanding of the cultural, historical, and technological aspects of games, enabling them to recognize the diverse forms and functions of games in society. They will be able to analyze and evaluate the educational potential of games in enhancing STEAME learning, demonstrating proficiency in applying game design principles to create engaging and educational game experiences, and will develop critical thinking and problem-solving skills through hands-on engagement with game-based learning activities, fostering their ability to adapt to changes in gaming technologies and trends. Students will also collaborate effectively with peers to design, develop, and

	evaluate educational games, demonstrating openness to interdisciplinary perspectives and reflecting on the ethical considerations of game content and its impact on players and society. Finally, they will foster a growth mindset towards learning and innovation in game design and education, recognizing the value of play and exploration in learning and creativity. **Expected Results:** • Increased awareness and appreciation of the value and impact of games on society and individual behavior. • Proficiency in applying game design principles and digital tools for game development and presentation. • Improved critical thinking and problem-solving skills through engagement with game-based learning activities. • Enhanced collaboration and communication skills through teamwork and peer collaboration in designing and evaluating educational games. • Development of a growth mindset towards learning and innovation in game design and education, fostering lifelong learning and adaptation to changes in the gaming landscape.
Prior Knowledge and Prerequisites	• Basic understanding of game mechanics and gameplay. • Familiarity with digital tools and technologies for multimedia creation. • Interest in exploring the intersection of technology, arts, and engineering in game development.
Motivation, Methodology, Strategies, Scaffolds	• Project-based learning approach with hands-on activities and collaborative projects. • Integration of technology, arts, and engineering concepts into game design and development. • Differentiation of instruction to accommodate diverse learning styles and skill levels. • Scaffolding techniques to support students in applying critical thinking and problem-solving skills.

4. Preparation and Means

Preparation, Space Setting, *Troubleshooting Tips*	*Procedures, spaces, and material preparation* *Setting in classroom, outdoor activity, computer lab, hybrid environment, etc.*
Resources, Tools, Material, Attachments, Equipment	*Instructional sources and digital material with the related references needed for the implementation of the learning plan*
Health and Safety	

5. Implementation

Instructional Activities, Procedures, Reflections	**Classes and Activities:** • Facilitate brainstorming sessions to generate ideas for game concepts, drawing inspiration from various sources including mythology, literature, and real-world experiences.

	• Assign after-class tasks and homework focusing on individual and team-based assignments led by experienced teachers, encouraging students to explore diverse aspects of game design and development. • Engage students in hands-on practices with support from additional teachers if necessary, providing guidance on multimedia and digital expertise to enhance their game creation skills. **Feedback and Reflection:** • Encourage students to maintain journals and engage in self-reflection sessions to document their thinking processes and learning experiences throughout the game development process. • Facilitate individual and teamwork sessions led by experienced teachers to encourage students to reflect on their progress, identify areas for improvement, and share insights with peers. **Monitoring and Evaluation:** • Utilize regular class sessions to monitor students' learning progress and evaluate their understanding of key concepts related to game design and development. • Employ assessments based on a common rubric to measure students' proficiency in applying game design principles, their ability to collaborate effectively, and their critical thinking skills in designing and evaluating educational games.
Assessment - Evaluation	• Utilize rubrics to evaluate game design projects and student reflections. • Assess student proficiency in applying game design principles and digital tools. • Evaluate collaboration skills and contributions to team projects. • Provide opportunities for peer feedback and self-assessment.
Presentation - Reporting - Sharing *Extensions - Other Information*	*Documents, outputs, artifacts, products produced by the students with references, web links etc., for sharing to media*

STEAME ACADEMY Prototype/Guide for Learning & Creativity Approach
Action Plan Formulation

Major steps in the STEAME learning approach:

STAGE I: Preparation by one or more teachers

1. Formulating initial thoughts on the thematic sectors/areas to be covered
2. Engaging the world of the wider environment / work / business / parents / society / environment/ ethics
3. Target Age Group of Students - Associating with the Official Curriculum - Setting Goals and Objectives
4. Organization of the tasks of the parties involved - Designation of Coordinator - Workplaces etc.

STAGE II: Action Plan Formulation (Steps 1-18)

Preparation (by teachers)

1. Relation to the Real World – Reflection
2. Incentive – Motivation
3. Formulation of a problem (possibly in stages or phases) resulting from the above

Development (by students) – Guidance & Evaluation (in 9-11, by teachers)

4. Background Creation - Search / Gather Information
5. Simplify the issue - Configure the problem with a limited number of requirements
6. Case Making - Designing - identifying materials for building / development / creation
7. Construction - Workflow - Implementation of projects
8. Observation-Experimentation - Initial Conclusions
9. Documentation - Searching Thematic Areas (AI fields) related to the subject under study – Explanation based on Existing Theories and / or Empirical Results
10. Gathering of results / information based on points 7, 8, 9
11. First group presentation by students

Configuration & Results (by students) – Guidance & Evaluation (by teachers)

12. Configure STEAME models to describe / represent / illustrate the results
13. Studying the results in 9 and drawing conclusions, using 12
14. Applications in Everyday Life - Suggestions for Developing 9 (Entrepreneurship - SIL Days)

Review (by teachers)

15. Review the problem and review it under more demanding conditions

Project Completion (by students) – Guidance & Evaluation (by teachers)

16. Repeat steps 5 through 11 with additional or new requirements as formulated in 15
17. Investigation - Case Studies - Expansion - New Theories - Testing New Conclusions

18. Presentation of Conclusions - Communication Tactics.

STAGE III: STEAME ACADEMY Actions and Cooperation in Creative Projects for school students

Title of Project: _____
Brief Description/Outline of Organizational Arrangements / Responsibilities for Action

STAGE	**Activities/Steps** Teacher 1(T1) Cooperation with T2 and student guidance	**Activities /Steps** **By Students** Age Group: ____	**Activities /Steps** Teacher 2 (T2) Cooperation with T1 and student guidance
A	Preparation of steps 1,2,3		Cooperation in step 3
B	Guidance in step 9	4,5,6,7,8,9,10	Support guidance in step 9
C	Creative Evaluation	11	Creative Evaluation
D	Guidance	12	Guidance
E	Guidance	13 (9+12)	Guidance
F	Organization (SIL) STEAME in Life	14 Meeting with Business representatives	Organization (SIL) STEAME in Life
G	Preparation of step 15		Cooperation in step 15
H	Guidance	16 (repetition 5-11)	Support Guidance
I	Guidance	17	Support Guidance
K	Creative Evaluation	18	Creative Evaluation