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EMERGING TRENDS

PERSONAL REFLECTION

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Individual Reflective Journal:

Working on the **EduGuardian AI** project was a highly valuable experience for me because it allowed me to develop both technical and professional skills in a realistic team setting. Our project focused on designing a desktop-based early warning system to identify students at risk of dropout or burnout through explainable, rule-based analytics. From my individual perspective, this project was not only about creating a solution, but also about learning how to coordinate people, manage shared responsibilities, and contribute across multiple stages of development. Overall, I believe I made a strong contribution to the team and gained important experience in collaboration, planning, and problem-solving.

My role in the project extended across almost every section. One of my main contributions was helping to **organise and distribute tasks** among the five team members. Because the project included research, technical design, prototype logic, diagrams, presentation preparation, and speaking roles, it was important to divide the work clearly and fairly. I helped structure responsibilities according to each member's strengths and ensured that everyone understood what they needed to do. This improved efficiency and reduced duplication. In addition, I helped to **organise team meetings**, where we discussed progress, checked unfinished work, and solved issues together. I found that this coordination role was essential because a good idea can easily fail if communication is weak.

I also contributed directly to the practical development of the project. I supported the team in shaping the **prototype concept**, especially in relation to how the system would work in practice as a desktop-based tool using synthetic data, a database, scoring rules, and dashboard outputs. I was involved in **creating the use case diagram**, which helped explain how staff, the system, and students interact. This strengthened the clarity of our presentation because the audience could easily understand the flow of actions and outcomes. In addition, I played a major role in **creating the PowerPoint slides** and bringing different sections together into a consistent presentation. Since group members worked on different content areas, I helped merge them into one professional final deck. I also **briefed other team members on their presentation parts**, helping them understand the logic, structure, and key points of their allocated slides. This made our presentation more connected and professional.

My experience of working within the team was largely positive. I enjoyed collaborating with others and found the teamwork exciting because each person brought different ideas and abilities. At the same time, the project also showed me that teamwork requires patience, flexibility, and responsibility. Not every member worked at the same pace, and sometimes reminders or extra support were needed to keep things moving. I learned that effective teamwork is not simply dividing tasks, but also checking quality, supporting weaker areas, and helping the group remain focused on the final objective. I believe I performed well in this environment because I stayed involved throughout the project and was willing to help beyond my own section when necessary.

In evaluating team performance, I would say the group worked reasonably well overall, although there were differences in the level of contribution. Based on my experience, I would rate the team members as follows:

- **Mirela Gerasimova Balabanova-Kehayova: 4.5/5 – very reliable and contributed strong content.**

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| • <u>Andrey Atanasov: 4.5/5 – completed tasks well and participated in discussion.</u> |
| • <u>Pedro Gaetjens 3: 4.0/5 – contributed useful ideas but needed more consistency.</u> |
| • <u>Catalin Dragomir 4: 4.5/5 – supportive and cooperative in presentation preparation.</u> |
| • <u>Myself: 4.5/5 – contributed across planning, coordination, technical support, diagram creation, slide development, and team briefing.</u> |

These ratings reflect not only task completion but also communication, teamwork, and willingness to support the group. In my view, our team’s overall performance was good because we managed to produce a coherent and practical project, even when balancing different working styles and time pressures.

From a technical perspective, the solution has several strengths, but also some important **limitations**. One limitation is that the prototype relies on **synthetic data rather than real institutional data**. This was useful for privacy and GDPR-safe development, but it also means that the system has not been validated in a real educational environment. A second limitation is that the scoring model is **rule-based**, which improves explainability but may reduce flexibility compared with machine learning approaches. Fixed thresholds can oversimplify student behaviour and may miss hidden risk patterns. Another limitation is that burnout is inferred from behavioural indicators such as inactivity, missed submissions, and ignored communication, rather than from direct psychological or wellbeing measures. Therefore, the system cannot fully capture the complexity of student mental health.

There were also several **risk factors** encountered during the project. One risk factor was **coordination risk**, because in a group task there is always the possibility that members contribute unevenly or complete work late. I helped reduce this risk by organising meetings and clarifying responsibilities. Another risk factor was **integration risk**, meaning that separate pieces of work might not fit together into one coherent final output. This became especially important when preparing the final presentation, and I addressed it by reviewing and restructuring slides for consistency. A further risk factor related to the design itself was **ethical risk**. If such a system were used in reality, there is a danger that students could be unfairly labelled as “high risk” based only on limited behavioural data. For this reason, we emphasised that the tool should support human judgement rather than replace it. There is also a **data governance risk**, since any real implementation would require strong controls over data access, security, consent, and transparency [1], [2].

When I compare our work with related approaches, it is clear that institutions increasingly use analytics to monitor retention, engagement, and student support [3], [4]. However, many existing systems are either institution-wide, commercially managed, or based on predictive methods that may not always be easy to explain. Our design attempted to address this gap by focusing on a smaller, transparent, and educational prototype. In this sense, the project was not trying to outperform major university systems, but to demonstrate a practical and explainable early warning concept.

In terms of **future work**, I believe the prototype could be improved significantly by integrating real-time data sources such as Moodle or student record systems. It could also be enhanced through more advanced analytics, role-based access controls, automated alerts, and more robust validation using real case data. Another future improvement would be to combine rule-based logic with supervised learning while preserving interpretability. This would allow stronger predictive capability without losing transparency.

In conclusion, this project was a very meaningful learning experience for me. It strengthened my skills in teamwork, communication, coordination, technical thinking, and presentation design. My contribution went beyond a single section, as I supported task distribution, team meetings, prototype development, use case creation, presentation building, and team briefing. I also gained a deeper understanding of the limitations and ethical risks involved in educational analytics systems. Most importantly, I enjoyed working as part of a team and felt excited to help shape a project that was both innovative and practical. This experience has increased my confidence in collaborative project work and prepared me for future academic and professional challenges.

References

- [1] Jisc, “Learning analytics,” 2026.
- [2] UK Parliament, “Student mental health in England: Statistics, policy and guidance,” 2025.
- [3] C. Herodotou *et al.*, “Predictive learning analytics ‘at scale’: guidelines to successful implementation in higher education based on the case of The Open University UK,” *J. Learn. Anal.*, 2019.
- [4] Higher Education Statistics Agency, “Non-continuation: UK performance indicators,” 2022.