

Agile Team-Based Learning model in a Developmental Psychology course

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1. INTRODUCTION

Teaching methodologies used at universities require a major, evidence-informed innovative push, because the current state of the art is mostly based on tradition and intuition. This paper examines an educational methodology, which is a combination of interventions with robust empirical evidence, high estimated impact, and low estimated cost, as summarized in the EEF Teaching and Learning Toolkit (Edoald & Nevill, 2021; Higgins et al., 2022). Agile Team-Based Learning (ATBL), as this approach will be called, includes the following essential components: a) Collaborative learning approach, with students working together on activities in small groups, in a structured way. As students often need support, to be able to work together effectively, scaffolding in the principles of agile management practice is also provided; b) Feedback, with multiple sources of data, which include the instructor and peers, as well as beneficiaries of the service that the students are providing; c) Metacognition and self-regulation, where students learn specific strategies for planning, monitoring, and evaluating their learning.

The intent participation model is a “cultural gadget” (Brandl et al., 2023) originally observed in the social organization of indigenous groups of the Americas. Assembly-line instruction is the well know post industrial “teaching gadget”, heavily influenced by the growing need to explain abstract concepts following the emergence of modern science. Both practices have their strengths and weaknesses. Collaborative learning and multiple sources of feedback, including peers, as well as real-life “customer” feedback gathered while engaged in a realistic, productive activity, are the clear strengths of the intent participation model. Expert provision of strategies for task planning and monitoring, as well as worked-out examples illustrating application of theoretical concepts, supported by frequent quizzing, are the strengths of the assembly-line approach. ATBL draws on both of these traditions, looking at their complementarity. The following sections of this report present this approach in more detail.

2. METODOLOGY

ATBL was evaluated in a Developmental Psychology course, offered to first year bachelor’s in psychology students, at SWPS University (Warsaw, Poland) in 2023/2024 academic year. It was a 6 ECTS points module with fifty-four contact hours, offered for the first-year students. The course enrollment was about 125 students. Thirty contact hours were realized in a format classically known as a “lecture,” with every student present in a large auditorium, and this was the way to focus on the assembly-line pedagogical model. Twenty-four contact hours were devoted to small group meetings (“workshop”) of about twenty-five students each (24 hours * five groups in total), and this was organized with a focus on intent participation. Course was supplemented with a website, available at: [Developmental Psychology \(notion.site\)](#).

2.1 Large team meetings (LTM)

Large team meetings were similar to the “lectures” known from the assembly-line instruction, but with several important changes. In order to manage violation of expectations, students were informed about the reasons for not following the standard “lecture” format, with expository speech by the instructor. It was argued that this format is detrimental to their long-term learning outcomes, even if it can produce short-term satisfaction and an illusion of fluency. Students were informed that expository lectures inhibit knowledge creation and lead to lower examination performance. Evidence shows higher failure rates in expository-based courses than in active learning (Freeman et al., 2014).

2.2 Small team meetings (STM)

Small team meetings focused on collaborative learning, feedback and metacognitive elements. Students worked in teams of about 5-8 people, which is typical for agile methodology, as well as for diverse teams set up with a purpose to design and implement innovative A/B experiments in business settings (Kohavi et al., 2020). Teams were stable throughout the

semester and students worked on a single, large project. To manage free-riding team member exclusion was allowed, with Lecturer mediation in conflict situations.

Students were asked to produce a meaningful, challenging, usable product, grounded in the knowledge from developmental psychology. Group workflow was managed using Kanban Boards. Those boards were used as focus points during STMs, with Lecturer being able to monitor progress, as well as judge the input of individual team members, since every student needed to have concrete tasks assigned to them on the Kanban Board. To foster mastery and not performance goals, it was emphasized that creativity, risk-taking, effort, as well as learning from mistakes will be rewarded. In practice, this meant placing emphasis on the number of design ideas, as well as rapid empirical testing of suggested solutions, instead of a long term (semester-wide) plans for a single design. Formal recognition of students' work was done privately, but the products were publicly highlighted.

3. RESULTS AND CONCLUSION

In the end a total of eighteen student products were created. As students had the choice to decide on the format for the project, a variety of options were chosen. The most popular being: YouTube videos, Spotify podcasts, social media accounts, Physical objects (a toy, a card game), as well as an interactive PC game. Student engagement was extremely high, and final products were of substantial quality, meeting the standards present in popular “hackathon” competitions or equaling semi-professional YouTube recordings. Each student group completed a webpage, which described their creative progress, as well as mistakes and problems, which could offer hints to subsequent cohorts (please see: [Developmental Psychology 2023: Project Showcase \(notion.site\)](#)). In conclusion, several elements seem to have worked in the ATBL methodology, in comparison with a standard lecture and seminar format: a) focus was heavily drawn away from the final examinations, knowledge recognition tests, and passive lecture attendance, towards making of the final product, application of knowledge, and far transfer; internal motivation related to product creation the usability of the final product in the eyes of potential users seem to have outplayed the external motivation for grades; Importantly, students not only plan a real-life project, but realize it, getting feedback on each iteration; b) students were capable of self-guiding their IT skills mastery, such as finding tutorials for video, audio recording, or game asset making; c) public showcasing of student products seemed to outweigh the lack of public “presentation grading”, in terms of motivation; d) the biggest challenge was the lack of day-to-day habits in the use of agile methodology, and a tendency to fallback on the “waterfall planning” approach, where a single project is carefully designed over a long period of time, without much feedback, changes and experimentation. It turned out that the use of tools, such as the Kanban board, is necessary and facilitating team management is crucial, especially in mid-term, after initial project development; e) ATBL can be successfully realized by a single lecturer, and it's outcomes correspond with costly “hackathon” projects involving multiple business consultants. The conclusions of this single case study should be supplemented with a proper experimental A/B testing in the near future. Hopefully, the approach to educational design will soon exit a HiPPO phase (Highest Paid Person's Opinion, (Kohavi et al., 2020) with entrenched norms, beliefs, and paradigms, and enter an era of rapid and frequent experimentation.

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