

## Introduction

Gamification is the use of game-related features in environments not related to entertainment; e.g. educational environments (Deterding, 2015) – see Figure #1. According to the Pew Research Center (PRC) (2012, para.11), “by 2020, gamification ... will not be implemented in most everyday digital activities ... gamification ... will not advanced much beyond being an interesting development.” In terms of Artificial Intelligence (AI), the PRC (2018) acknowledge its proliferation in everyday activities; however, by 2030 AI will raise questions its detrimental impact on human capability, such as speech. Educational Gamification and Artificial Intelligence (AI) has been used in a cooperative manner to augment one another; e.g., AI can increase the difficulty level of a gamified learning task if it detects the player is bored (Barata et al., 2015).

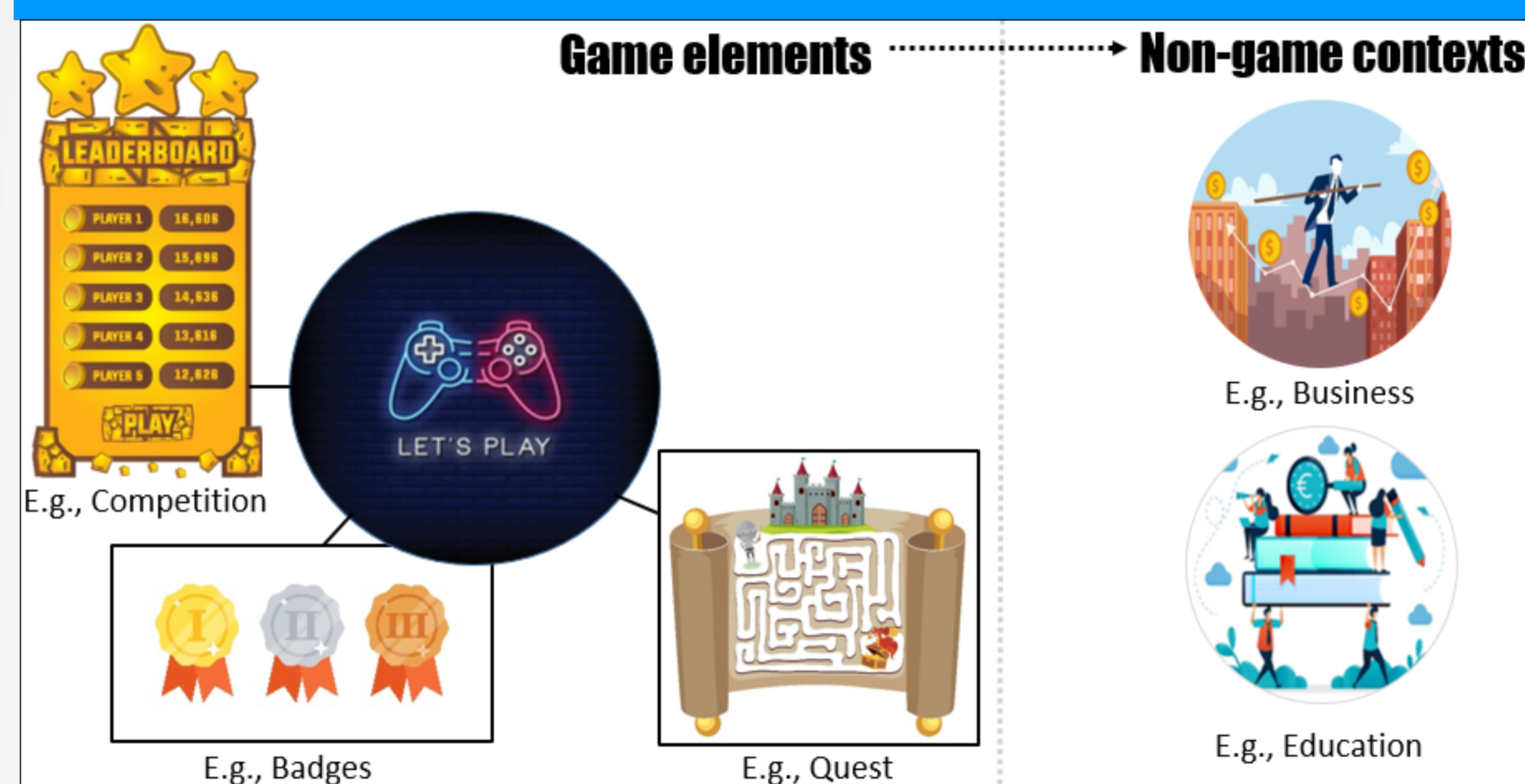


Figure #1

## Research Problem

While AI made significant strides in predicting human needs, AI cannot account for all human needs. Indeed, AI might inadvertently become a learning barrier in gamified Information Systems learning.

## Methodology

Action research guided data collection. Action Researchers (1) diagnose a problem, (2) plan actions, (3) implement planned actions, (4) evaluate actions to determine if problem has been solved and (5) reflect on process (Oates, 2006) (see Figure #2) . Table #1 illustrate these phases in the context of this present research study.

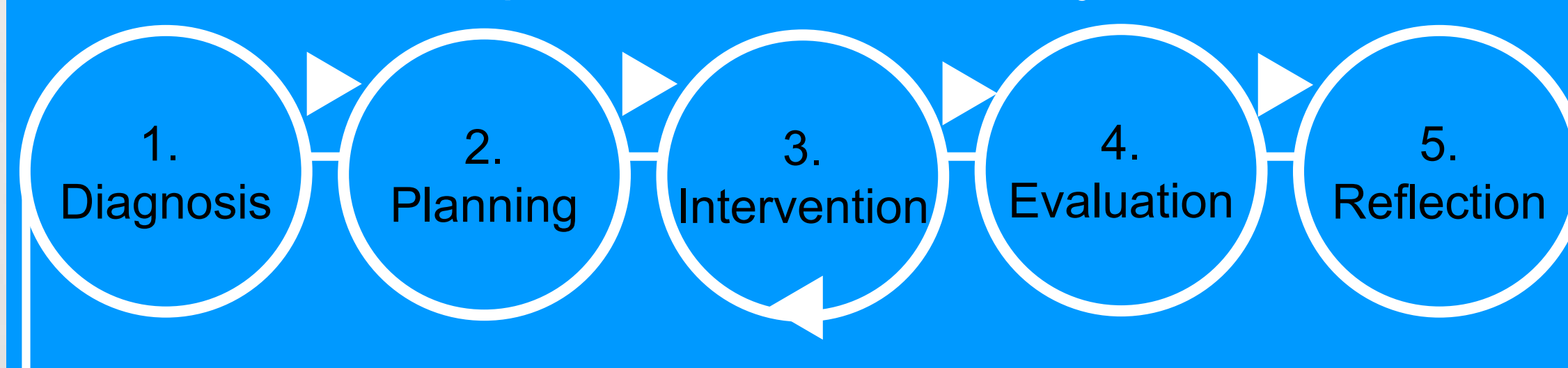


Figure #2

<b>Diagnosis</b>	Explain the purpose of Gamification
<b>Planning</b>	Choose gamification strategy that aligns with learning goals
<b>Intervention</b>	Engage gamification
<b>Evaluation</b>	Assess whether the game resulted in a more engage and motivating learning experience by conducting interviews and focus groups
<b>Reflection</b>	Reflect on outcomes

Table #1

## Gamification strategy

- ▶ Student participants chose Quizlet Live (QL) (2018) as a gamification strategy.
- ▶ QL involves teams taking a quiz (based on learning content) on digital devices.
- ▶ Each team member plays own device, but all members receive same question. only one device has correct answer. Members must collaborate to determine whose device has correct answer (see Figure #3).
- ▶ During gameplay, the instructor displays their progress against other teams as a race via an interactive leaderboard. If a team gives an incorrect answer, Quizlet Live reset their progress to zero – they must start from the beginning.

- I regard 'progress reset' as AI.
- Rapid automation of a time consuming task.
- Human instructor not able to execute progress-reset as quickly and effectively as the technical system.

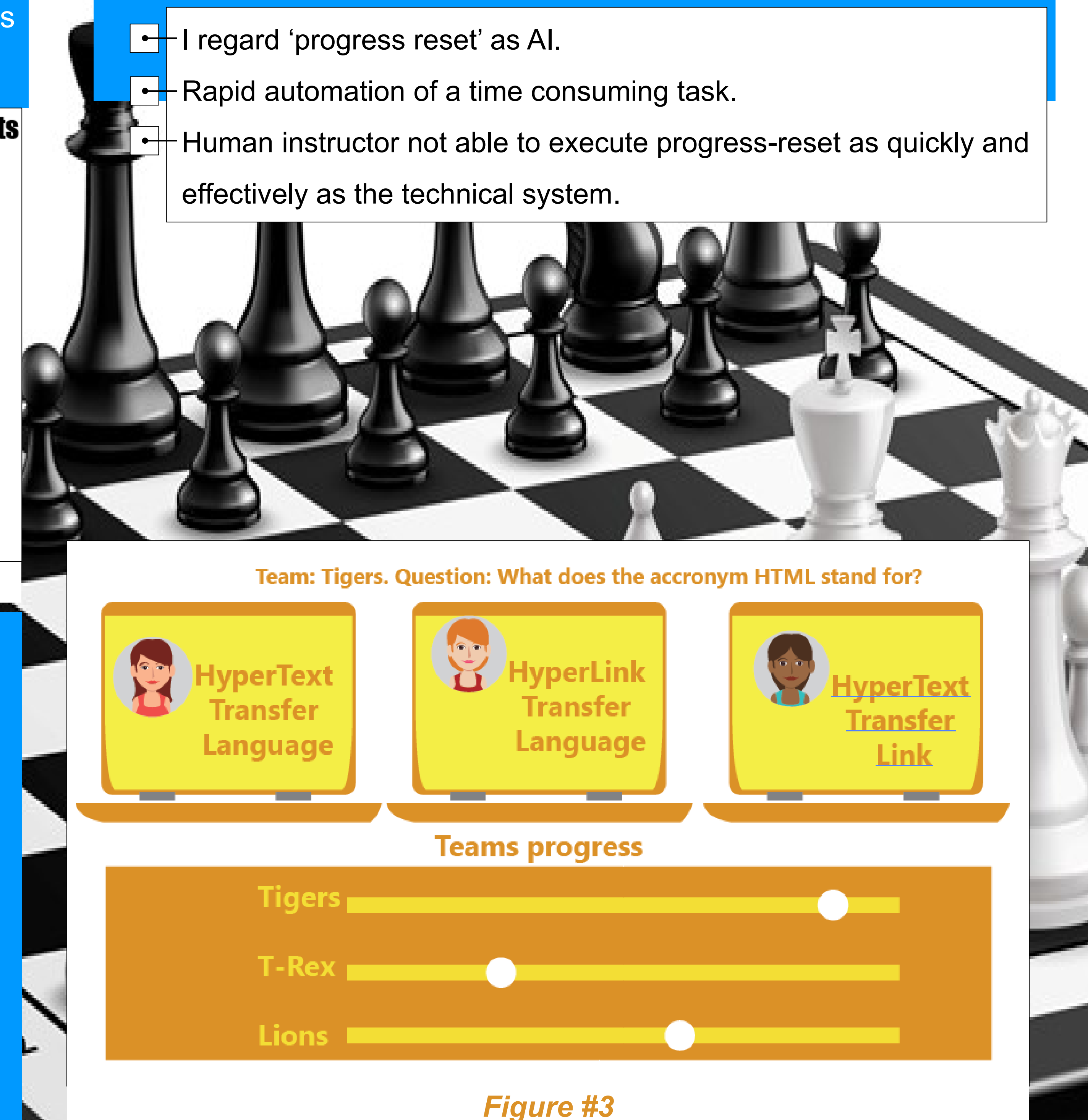


Figure #3

## Findings

Negative views of progress reset:

- ▶ *Withdrawn students*
- ▶ *Non-fluent English speaking students*

QL initially only available group play mode, recently individual play mode became available. The strong focus on group play is consistent with the predominant emphasis on team work in Information Systems (IS) education and the IS industry.

### Withdrawn students

withdrawn students struggle to *communicate* in a group, which leads to many progress resets. This suggest that individual play remains an important alternative to group play:

“I play with other people like friends, but I’m not really a player of group” [Student 11].

### Language

One of the student looked unnerved, little collaboration with teammates. The lecturer explained that he struggles to communicate in English, French is his first language. However, non-fluent English speaking students embrace English as an instruction medium. Strong perception that English proficiency is essential to perform in a hyperconnected, globalised world. These students put in a lot of effort to become English proficient:

“Isn’t it like Java or something where if you are in a medical area, you say medical words and another person won’t understand ... and if you translate it, it doesn’t make sense” [Student 6];

## Discussion

### Proposition 1

- Withdrawn students might perform better in individual play. Pursuit of English proficiency by non-fluent English speaking students might improve their gamification performance. Improved performance might result in positive perception of gamification.

### Proposition 2

As a result of Improved English, non fluent English speaking students might be more receptive to English learning environments.

As result of increased confidence through individual play, withdrawn students might be more receptive to group play.

- Positive English and group play might result in a positive gamification perception.

### Proposition 3

- As a result of improved English, non-fluent English speaking students will perform better English learning environments. As a result of increased confidence through individual play, withdrawn students might perform better in group play.

## Conclusion

AI is narrow, cannot account for all social factors. Democratize gamified information systems. Develop IS content in other languages, despite Beliefs of English as the de facto language. Include students in the design of gamification technology so that they can communicate their needs. Use gamification technology that have both single and multiplayer mode.

## Bibliography

1. Barata, G., Gama, S., Jorge, J., & Gonçalves, D. (2015). Gamification for smarter learning: tales from the trenches. *Smart Learning Environments*, 2(1). <https://doi.org/10.1186/s40561-015-0017-8>
2. Deterding, S. (2015). The Lens of Intrinsic Skill Atoms: A Method for Gameful Design. *Human-Computer Interaction*, 30, 294–335. <https://doi.org/10.1080/07370024.2014.993471>
3. Oates, B. J. (2006). *Researching Information Systems and Computing*. London: Sage.
4. Pew Research Center. (2012). The Future of Gamification. Retrieved November 23, 2021, from <https://www.pewresearch.org/internet/2012/05/18/the-future-of-gamification/>
5. Pew Research Center. (2018). Artificial intelligence and the future of humans. Retrieved November 23, 2021, from <https://www.pewresearch.org/internet/2018/12/10/artificial-intelligence-and-the-future-of-humans/>
6. Quizlet. (2018). *How to Play Quizlet Live*. Retrieved from <https://www.youtube.com/watch?v=q64qTBfK0iE>