The Burden of Choice: Using Games to Teach Ethics as a Skill

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Abstract: Learning and teaching ethics often presents a series of challenges that are not found in other topics. In order to teach (and learn) ethics as a skill, descriptive approaches are often not enough, and a more direct experience to ethically-relevant situations that prompts for subjective reflection is needed. Examples of relevant scenarios might be used to strengthen the learning of ethically-relevant matters, but even in these cases, the spectator is still a sort of "back-seat driver" with no agentivity. However, interactive media, such as digital games, can sometimes require the player to decide, up to a point, the way a fictional story is tailored. This added agentivity can allow for the appearance of a feeling of responsibility towards choices and outcomes, and can be helpful to foster genuine reflection on the ethically-relevant dimension behind. This paper explores how different game design approaches can be used to prompt genuine ethical reflection in their players. This exploration focuses on the design of meaningful choices, attachments and spaces for reflection as the key elements in order for a game to be used as a gateway to learning ethics by subjective exposure. The paper starts by considering how different techniques have be used in commercial games in order to do create genuine moral involvement. The insights taken from these considerations are then applied in the design and implementation of a prototype of an interactive narrative, currently under development, aimed to be used as a complementary tool to teach (and learn) ethics as a skill.

Keywords: ethics, ethics learning, game-based learning, moral gameplay, interactive narrative

1. Introduction and Motivations

Ethics is an important part of education that appears in the syllabus of practically every professional and higher degree courses. Nevertheless, ethics is sometimes reduced to a set of legalistic regulations and therefore ethics ends up being refurbished into mere compliance. This approach falls short in terms of learning ethics as a skill that could to be incorporated in the everyday mindset of current and future professionals in order to both identify and mitigate potential ethically-undesirable effects, as well as to recognize and exploit ethically-desirable ones. Nevertheless, and as it is argued in (Casas-Roma et al, 2022), ethics is understood as a skill requires a combination of an understanding of the relevant *ethical principles*, an *awareness* and a *sensitivity* towards the nuances of the particular context, and *empathetic recognition* of the patients that might be affected by the outcomes, as well as the *reasoning skills* needed to foresee potential consequences and balance the ethical dimension of a decision with other conflicting interests and tensions.

Even though these abilities can be conceptually understood from a theoretical point of view, being able to apply these abilities in a practical context is needed in order to train them --just as with any other skill. The use of real-life examples (Biedenweg, 2013; Soudek, 2018) and fictional settings allow to explore ethically-relevant scenarios; nevertheless, non-interactive scenarios (be them based on real cases, or fictional) still leave the student "outside" of the scenario as a sort of "back-seat driver" with no agentivity. Some forms of interactive fiction, such as narrative-driven games, can be a tool to reach beyond the role of the "observer" and give agentivity to the player. As such, games and interactive narratives can be a valuable tool to complement the teaching of ethical competences.

This paper follows up the initial design considerations of a prototype of an interactive narrative, introduced in (Casas-Roma et al, 2022), that aims to use techniques from game design to prompt genuine ethical reflection on their players. Section 2 presents some existing techniques that commercial games have used to create moral gameplay and discusses how to aim towards the players' genuine involvement; Section 3 exemplifies how some of these insights have been incorporated in the interactive narrative prototype, and discusses some challenges and first directions towards a way of evaluating the effects of this narrative. Section 4 provides some concluding remarks and points to further lines of work.

2. Fiction, Moral Gameplay and Genuine Reflection

Even if they are not real, stories of fiction have always been able to prompt a wide range of emotions in their audience and through many different formats, such as books, movies, or theatre plays, to name a few. Nevertheless, the spectator is still "separated" from the fiction and is kept outside of it, with no power over the events that happen within it: in other words, they lack interactivity. Forms of interactive narratives, like choose-your-own-adventure books, their movie counterparts (such as Netflix's *Black Mirror: Bandersnatch*), or

narrative-driven games (either digital, or tabletop) provide the spectator (which, in those cases, might be already referred to as the "player") with the opportunity to provide their own input to determine how the story may move forward. This clearly distinguishes interactive media from other types of media, and in turn allows to potentially prompt a range of emotions that cannot be prompted otherwise: namely, *moral emotions* (Zagal, 2009; Švelch, 2010; Sicart, 2013), such as guilt, or pride, which require the person to feel responsible of their decisions.

Among many others, some examples of digital games that clearly integrate an ethically-relevant dimension in them could be *Papers, please* (Heron and Belford, 2014), *Bury me, my love*, or *Undertale* (Seraphine, 2018), just to name a few. Similarly, some examples of tabletop games that show how players can also get subjectively involved in regards to their ethical dimension are *Train*, or *This War of Mine*, for instance. In order to achieve this sort of subjective involvement in a game there might be no infallible, secret formula; nevertheless, there are a few features that, although maybe not sufficient, can he helpful to open up the path towards making the players feel subjectively invested in the morally-relevant dimension of the fiction.

2.1 Techniques for Moral Gameplay in Digital Games

Making an exhaustive list of game design techniques that could be successfully used to prompt genuine ethical reflection through moral gameplay would surely take more space than can be devoted in this paper, so the focus here will be placed on some of the most common approaches that can be found in games that are usually considered in the analysis of morality systems and / or moral gameplay.

2.1.1 Explicit vs. implicit morality systems

Although it might sound contradictory at first, having a morality system that is explicitly shown to the player is not a technique that prompts, *per se*, genuine ethical reflection on the player. An *explicit morality system* can be understood as the archtypical single, or multi-axes-based system that shows the current state of the PC's moral persona to the player. Typical examples of games featuring some variations of this approach include *Fable* series, *The Elder Scrolls* series, some titles in the *Fallout* series (see (Casas-Roma and Arnedo-Moreno, 2019) for a comprehensive analysis of the different techniques used for morality systems in the series).

There are some issues related to explicitly showing the player what their moral persona is at each moment. One of them is the fact that the player doesn't need to remember and reflect on the moral dimension of the decisions they have made in the past, as the system explicitly keeps track of that. Rising awareness and reflection on ethically-relevant matters requires to foresee and understand the ethical dimension of a reflection without resorting to an explicit, objective account of it that can be checked. Similarly, explicitly showing the PC's moral alignment leads to the morality system becoming another strategeable part of the game that can easily be seen as a stat that have to be tweaked in order to achieve certain in-game rewards. As such, the moral dimension of in-game decisions can end up feeling only as a means to an end in order to tweak such stat --just like any other number-driven stat in the game.

In this regard, it is possible to use implicit morality systems that require the player to understand, remember and anticipate their morally-relevant deeds within the game fiction and without non-diegetic feedback from the game, such as in *Ultima IV*, which require that the player gets genuinely involved in the game's world and it values in order to move forward in it (Hayse, 2010). Other techniques such as the so-called *hidden spectator* (Švelch, 2010), which secretly tracks certain decisions without the player knowing in order to "come back" at the player afterwards, can be used to avoid the effect of the player delegating the weight of their morally-relevant actions unto the game's system. Instead, these techniques require the player to understand, anticipate and remember their actions "outside" of the game's HUD and "inside" the game's world, and therefore can be better suited to genuinely involve the player into the moral dimension of their actions.

2.1.2 Anticipating choices' polarity

Some games, such as the *Mass Effect* trilogy, provide a color code in the dialogue choices offered to the player in order to let them recognize, prior to making a choice, what alignment is supported in that choice. This is useful in order for the player to decide what alignment they want to play, and stick to decisions that are in accordance to it. Nevertheless, by using this technique the player is not required to try to understand and anticipate how each choice could affect the story and the characters in it, as the "good" and the "bad" choices are already highlighted to them.

Similarly as in the case of morality systems, providing explicit clues on the moral polarity of a choice can easily lead to the player delegating their understanding of such choices and their potential outcomes to the feedback provided by the game's HUD. As in the case of morality systems, removing this feedback (which, in this case, would amount to not highlighting the moral polarity of the choices available) would require the player to understand and anticipate, through their own reflections, what outcomes a choice is likely to cause.

2.1.3 Choices that are (or are perceived as) meaningful

Meaningful choices, in this context, refer to choices that have actual consequences within the fictional setting, rather than being simply cosmetic choices that do not really affect the fiction in any relevant way. When players are given a choice in interactive media, these choices must either be, or at least feel meaningful in order for the players to become invested in them. Becuase, if the players' choices do not actually affect the fiction in any relevant way, why care about those choices? Or, alternatively, if no choice is even given, why should players feel that whatever happens to the characters is their responsibility?

The most obvious way of making a choice *be* meaningful is to have it affect the way the story unfolds --that is, to have some sort of branching narrative structure (Heussner et al, 2015). Nevertheless, interactive narratives that *truly* branch into different paths with significant differences and long-lasting consequences, instead of just being cosmetic divergments that ultimately converge into the same end-point (what is sometimes known as a *diamond-shaped structure*), can be rather costly in terms of the amount of writing and resources needed. As a more cost-effective alternative, and in order to avoid having to develop a different path for each and every choice available, choices that significantly affect the path of a narrative can be combined with other choices that, although maybe not being meaningful *per se* in terms of how they affect the overall plot, can *feel* meaningful through the way they are presented and perceived by the player.

Examples of such choices can be what is known as the *illusion of choice* technique (Švelch, 2010). Examples of this technique can be seen in games like *Silent Hill 2*, where at a certain point the player is given the "choice" to either try and save a friendly character from a monster, or to run away and leave the character on their own -- the funny part being that the player cannot possibly defeat that monster, and therefore any attempt to intervene will inevitably result in the death of the player, thus leaving them with the only option to run away and abandon the friendly character. Despite being no possible alternative to doing that, having the player be the one who actually has to "decide" to run away and leave the other character behind, rather than incorporating that as part of the animated sequence, can make the "choice" feel much more meaningful than if the player was just kept as a back-seat driver.

2.1.4 Forming para-social attachments

Attachments, in this context, refer to the ability that some works of fiction (including interactive media like digital and tabletop games, but also present in other forms of non-interactive media like books, movies, etc.) have to make the audience develop a sympathy towards their fictional characters --in other words, to allow for inter-subjective relations to appear between the spectator and the fictional characters in order to make the audience "care" about them. Becuase, otherwise, why would it matter to the players what happens to the fictional characters, if they do not feel a sympathy towards, or feel attached to them?

When thinking about para-social attachments, one usually thinks about attachments that the player may form with the fictional characters inhabitting the game --that is, the non-playable characters, or NPCs. The "shape" of a character can be important when determining whether para-social attachments can be formed with the player. Characters can be considered *flat* when they do not explicitly embody a personality, a belief system, or drives and goals, and be considered *round* otherwise --that is, when the fictional character is shaped to embody a specific personality and particular mental trait (Forster, 1974). When focusing on NPCs, flat characters might feel more generic and impersonal than fully-fledged, round characters, and therefore it might be harder for players to become attached to them. Conversely, when NPCs are shaped as round characters exhibiting their own beliefs, drives, strenghts and weaknesses, developing an empathetic relationship with them may be easier, and therefore players might be more prone to caring about such characters and what happens to them.

2.1.5 Towards genuine moral reflection

By distilling the previous considerations on different techniques that can be applied in the context of moral gameplay, it can be concluded that aiming towards genuine moral reflection in the player might go in the opposite direction of a common principle in game design: feedback. In this sense, the more feedback the player

is given regarding the moral dimension of their choices (at least in terms of non-diegetic feedback, such as in the case of HUD elements, stats, highlighted parts of the game screen, etc), the less the player is required to genuinely and subjectively understand, anticipate and reason about such moral dimension. Of course, a balance is needed, and feedback must sill be given for the player to understand how their actions affect the game; otherwise, the player might end up believing that none of what happens has to do with their choices. This feedback, nevertheless, may be given through diegetic elements, such as the way the enviornment and the NPCs react to what the player do, or even by integrating it into the game's lore, such as in the case of *Ultima IV*.

Aiming for genuine reflection from the player appears, therefore, as a matter of finding the balance between how much is hidden and how much is shown to the player. In other words, genuine involvement requires to find a compromise between how close the game gets to the player, and how close the player is required to get to the game, so to speak. It requires for the designer to play the magician and understand how much is shown and how much is hidden to the player, and wait for the player to play their part in the game and get invested and immersed enough as to reflect on the morally-relevant nuances of the situations they are faced with.

3. An Interactive Narrative for Moral Gameplay

The previous reflections have been used in the design of a prototype of an interactive narrative experience aimed at supporting the learning of ethics in students and professionals. In particular, this prototype is directed towards information technologies (IT) students, as the current and future importance of digital technologies in virtually every layer of society already has the capacity to affect individuals, social groups and the whole society in profound ethically-relevant ways. The main motivations, theoretical framework and design decisions behind the prototype, which is currently being implemented using the *Twine*[1] editor for interactive narratives, are explained and justified in (Casas-Roma et al, 2022), but can be summarized in the following points:

- Acquiring ethical competences and skills is of paramount importance in order to tackle current and future challenges that professionals face and will have to face.
- Ethical thinking, therefore, should be part of the IT professionals' (as well as other kind of professionals, of course) development mindset and should be present in all stages of their professional practice.
- Interactive experiences could be used to support traditional methods in teaching and learning ethics as a skill, and can provide the subjective experience that other methods, such as purely descriptive and normative approaches, cannot offer.
- Following this, the aim of this interactive narrative is not to teach about particular ethical norms, but rather to present the students with choices that might not have a clearly good or bad solution (in line with what (Sicart, 2013) calls "wicked problems". In this sense, the aim is to contribute to the integration ethical thinking as part of the default mindset of the students by aiming to prompt genuine ethical reflection during the interactive narrative.

With the previous considerations on moral gameplay design techniques and the structural decisions made in the design of the interactive narrative prototype, the following sections present some examples to show how these considerations have been translated into the content of the interactive narrative.

3.1 Forming Attachments with the Characters

The prototype for the interactive narrative features four different characters that intervene at different points in the plot: Claire, Mark, Alex and Peter. Out of these four, two characters (Claire and Peter) have a closer relationship with the player character (PC), and therefore the decisions made by the player have a greater effect on the way these relationships evolve in the narrative. This is tracked by using an (implicit) *approval system*. Aside from their particular role each character plays in the fictional plot, each one of the four characters has been included into the interactive narrative to fulfill certain "functions" regarding the player, such as impersonating certain pressure points in some decisions, or exposing the player through different points of view by using these characters' voices --instead of using an impersonal narrator's voice[2]. In a nutshell, the characters' roles and functions are:

[1] https://twinery.org/

[2] Among other reasons, presenting these reflections through fictional characters, rather than through the passive voice of a narrator, has been motivated to avoid the feeling that the narrator's voice is omniscient, or that is has some "privileged" view of the state of affairs that strengthens any reflection uttered from that point of view. Instead, conveying such considerations through the voice of fictional characters allows to clearly relate those considerations to subjective points of view that depend on the specific beliefs and goals of such characters and that, furthermore, do not need to be true.

- Claire is a coworker in the PC's team who always advocates for choices that are ethically-correct, from her point of view and in regards to the ethical principles that appear in this interactive narrative. This means, however, that their advice might put in jeopardy other needs that might also need to be balanced during the game, such as the resources.
- Mark is also a coworker in the PC's team that somewhat plays the counterpart of Claire and prioritizes choices that are more favorable towards the team's productivity goals (and thus which positively affect the resources devoted to it), but which might not always take into consideration the ethical principles that are either upheld, or disregarded by such choice.
- Alex is the leader of a rival team which can compete with the PC's team for resources and recognition. As such, Alex would amount to a mild version of the story's villain. In this sense, Alex's function (besides his involvement in the narrative's plot) is to add pressure to the PC's decisions and outcomes.
- Peter is a representative of the management team and therefore impersonates the "higher power" of the company itself, having the power to decide over the PC's team and its resources. In this sense, and even if Peter's interactions are kept to a minimum, they represent higher order requirements that should be taken into account by the PC --and which, if they are disregarded, may lead to detrimental outcomes for the PC and their team.

3.2 Meaningful Decisions Through Variables and Choices

The overall structure of the interactive narrative is formed by a combination of *branches* and *gates*, together with the use of *global variables* to affect later sections of the narrative through previous choices (Casas-Roma et al, 2022). Choices available in this prototype have been designed to avoid providing clearly "good", or "better", and clearly "bad", or "worse" options; the reason behind this is because this prototype is not designed to support the teaching of "content" related to ethical principles, but rather to foster ethical reflection as part of the players' mindset at each and every decision they face. In the sense, and after drafing the overall narrative's plot and main events, a structure was created to keep track of how each and every possible choice within the narrative would affect each variable.

The initial state of the narrative features the following variables' values:

- *Ethical principles*: The player character starts the narrative with a "clean slate", with regards to their alignment with ethical principles (such as *honesty*, *integrity*, *user consent*, etc). As no decision has been made yet, all variables related to ethical principles are initiated at 0 (meaning that they have neither been upheld, nor disregarded).
- *Character approvals*: The fictional setting establishes the player as being the leader of a team in an already established company where both the player, as well as the rest of the fictional characters, have been already working for some time. In this sense, the player character is not unknown to the rest of the characters, and therefore the relationships are already established in a certain way[3]. The initial relationships are as follows:
- *Claire*: The initial relation with the player character is a positive relationship based on professional respect, trust and companionship. This is expressed as starting with a positive +1 approval rating (within a range of [-3, +3] ranging from *hatred* to *personal friendship*).
- *Mark*: Similar to Claire, the initial relationship with the character is based on professional respect, trust and companionship. Again, this is expressed as starting with a positive +1 approval rating.
- *Resources*: Even though it was initially planned to allow resources to both increase and decrease depending on various choices, in the end, and mainly due to the limited scope and length of the present prototype, resources start at a fixed positive amount of +2 and can either be maintained, or decreased, but never increased[4], thus ranging between [0, +2].

Providing an explanation of the context and ways in which every choice would affect each variable, even if kept brief, would not be feasable in this work for reasons of space. Nevertheless, a summary of the effects that the choices currently implemented within the interactive narrative have over the variables can be seen in Table 1.

[3] Note that, in the cases of the characters named Alex and Peter, the relationship they have with the character throughout the narrative is not explicitly tracked. Decisions made by the player during the narrative only affect those characters in cosmetic ways (i.e.: the way they react, their dialogue, etc).

[4] Undoubtedly, a longer narrative might benefit from the chance of making certain decisions that, although maybe at the expense of sacrificing some other variables, allow to increase the in-game resources in order to either gain some in-game benefits, or to gain some margin to allow for the loss of resources in other future decisions. Nevertheless, and because the scope of the present prototype is limited, this way of handling the resource variable is more convenient for practical terms.

Note how choices' outcomes have been intentionally curated to affect different variables and to try and balance their overall effect in order to avoid presenting a clearly beneficial path (where all, or most of the constrains are consistently satisfied), as well as to avoid a clearly worse path.

Table 1: Summary of the main choices and effects on the variables

	Claire's approval	Mark's approval	Resources	Ethical principles
Session 2-1	+1 / +0 / -1	-1 / +0 / +1	-	-
Session 2-2	-	-	-	+ / -
Session 3-1	+1 / -1	-	-1 / +0	+ / -
Session 3-2	-	-	-1 / +0	+ / -
Session 4-1	+1 / -1	-1 / +1	-	+ / -
Session 4-2	-	+1 / -1	+0 / -1	- / +

Considering the initial state of the variables, as well as the potential choices within the prototype, the possible "end game" states, with relation to the existing variables, are as follows:

- *Ethical principles*: Once the epilogue has finished, the last end-game screen will show the player the ethical principles that have been involved as part of their decisions during the narrative, and they will be presented with a screen summarizing which principles they have upheld, and which they have disregarded. This is where the in-game ethical principles can be related to the professional principles from which they were distilled, such as the ACM Code of Ethics[5].
- *Character approvals*: Aside from the way this rating affects the dialogue and the characters' reactions during the development of the narrative, the way the characters intervene in the epilogue will be determined by this.
- *Resources*: The range of this variable at an end-game state is within [0, +2]. The value of this variable might trigger one further decision for the player at the epilogue of the game:
- If Resources = +2, the player has managed to keep the team within the required productivity rate for the company, and no further decision is required.
- If Resources = +1, the player has not been able to keep the team within the expected productivity margins, and some restructuration is needed. As the leader of the team, the player is asked to fire either Claire, or Mark from the company.
- If Resources = 0, the player has consistently made decisions that had compromised the team's expected productivity margins, and management sees the team more as a liability than an asset at that moment. The PC is reassigned to Alex's team, and both Claire and Mark are fired.

An example of an in-game choice can be seen in Figure 1, which shows an excerpt in the Twine editor. At that point in the narrative, the PC is sharing their concerns about the possibility of the software showing bias with their two colleagues, Claire and Mark. After having suggested a possible way of moving forward, and having let Claire and Mark express their opinions regarding what to do, the player has to decide how they would like to distribute the tasks among three possible choices.

Another example of a choice can be seen in Figure 2, which shows a fragment of the scene where such choice is presented in a web browser when testing it directly from the Twine editor. Choices available to the player are shown as interactable parts of text in blue color; furthermore, an *inner monologue event* (see next section) has been already activated and corresponds to the text in italics in the third line of the paragraph.

[5] https://www.acm.org/code-of-ethics

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Besides, I don't like to talk badly about anyone, but... who claimed OUR
software is biased? Alex. How convenient would it be for him and his team
if that was true, right...? Or even if it wasn't true, but we wasted a
whole week of our time behind that, that'd be very convenient for him.
Look, what I mean is that we do NOT know if our software is biased, yet we
DO know we have been trusted with a rather complex project, which we are
supposed to deliver all good and running soon, and for which we need all
the time we can get... and you know this, boss."

Claire is about to answer and opens her mouth, but only a sigh comes out of
it. Mark looks at you. "So, what is it going to be, boss?"

[[Stand by your decision: running the tests is a priority. -> PREdevote-
CHOICE-devote-full-team]]

[[Reconsider and split the team between the tests and the current project.
-> PREdevote-CHOICE-split-team]]

[[Reconsider and keep the full team devoted to the forthcoming project. ->
PREdevote-CHOICE-no-reassign]]
```

Figure 1: Fragment of a choice in the Twine editor.

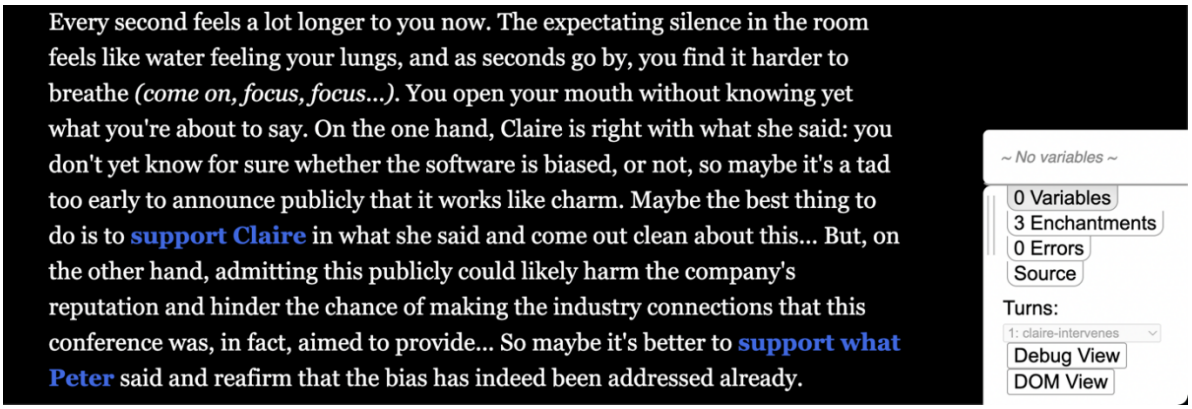

Figure 2: Choice shown in the web browser while testing the prototype.

3.3 Prompting Reflection through Spaces, Implicit Systems and Inner Monologue Events

Spaces of reflection are created by dividing the narrative into different sessions, each one related to a specific key event within the plot, and separating these sessions by a certain timespan in order to create a space for players to potentially reflect on their choices and anticipate on the potential consequences (Casas-Roma et al, 2022). This technique, together with the fact that variables are tracked implicitly and that no non-diegetic explicit feedback is given regarding the value of such variables, aims to prompt for the genuine reflection and involvement of the player in their decisions.

Additionally, there is another technique that is used in the development of this narrative to further enhance subjective reflection and immersion to the players: the inclusion of *inner monologue events*, which allow the player to interact with certain parts of the text in order to expand them with brief bits of text representing the PC's thoughts about that. An example of such event is as follows; the interactive event is marked as underlined text here, and the two bullet points show that part of the text before, and after interacting with the event:

- (...) "I want to thank you for this *great* presentation, in the first place..." You struggle to keep <u>smiling</u> as you listen to the rest of his question. (...)
- (...) "I want to thank you for this *great* presentation, in the first place..." You struggle to keep smiling *(why did he put so much emphasis on the "great" part?)* as you listen to the rest of his question. (...)

3.4 Towards an evaluation

The aim that this interactive narrative has, with respect to supporting the learning of ethical skills and competences, presents some challenges in the way it could be evaluated. There exist some examples of interactive narratives that have been created with the purpose of teaching research ethics (particularly in the

research misconduct, as in *The Lab*[6]. In those cases, the players who engage in the narrative are exposed to a series of good practices, principles and ways of carrying out hypothetical research activities that are aligned with ethically-desirable practices; as such, there is a *content* (be it in the form of good practices, or particular rules and principles) that can be learned, asked about and therefore assessed. In the case of the present interactive narrative, nevertheless, the goal is different, and probably more challenging to evaluate. The aim, in this case, is to prompt ethical awareness and reflection as part of the students' mindset when tackling problems related to their professional activities. Due to this, there is no specific "content", or specific skill, that can be easily accounted for and therefore evaluated before and after engaging with the prototype.

Approaches to evaluate and account for learning not solely based on specific knowledge or skills, such as the WeValue Methodology[7] for values-based learning, have been proposed. In those cases, evaluations often involve qualitative measures, subjective reflection and individual participation from students and teachers alike. This is, precisely, because what is meant to be taught and evaluated falls outside the scope of competences that can be easily demonstrated and measured via traditional assessment methods. In this sense, the approach followed in value-based learning could be a promising avenue towards the design of an evaluation method for the interactive narrative proposed in the present work, and will definitely be considered as the starting point once the prototype is finished and an initial evaluation process is designed.

4. Conclusions and Future Work

This paper discusses some game design techniques that can be used in the design of moral gameplay and towards aiming to prompt genuine moral reflection in the players. This discussion of existing techniques suggests that, in order to achieve genuine involvement for tha part of the player, a balance needs to be found between providing explicit feedback regarding the ethically-relevant elements in the game, and the requirement for the player to subjectively engage in the game's fiction. The more the game explicitly aids the player in their moral decision-making and the tracking of their moral persona, the less the player needs to understand, reflect on and anticipate the moral dimension of their choices. The insights gained from this discussion is then used in the design and development of a prototype for an interactive narrative aimed to be used as supporting material to teach ethics as a skill, and some examples belonging to this interactive narrative are presented. Lastly, an initial consideration regarding how this kind of learning could be evaluated is suggested as a first step towards en evaluation method to test the effectiveness of this prototype.

A clear line of future work, once the prototype is ready, is to run a few preliminary tests and get some qualitative feedback regarding the content, structure and engagement of the interactive narrative in order to iterate and improve any identified shortcomings. These preliminary tests can be run among fellow educators and game developers to assess both their teaching potential, as well as potential improvements in terms of narrative design. Once the prototype has been refined, designing an evaluation procedure and running larger scale tests among students would be the next natural step. The design of this evaluation procedure should be carefully tailored in order to ensure that it measures what this interactive narrative is meant to provide support to, rather than what is usually measured in traditional learning materials: namely, the evaluation should be shaped in order to measure whether there is an increased predisposition in integrating ethical thinking as part of the default mindset of the students.

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[6] https://ori.hhs.gov/the-lab

[7] https://blogs.brighton.ac.uk/wevalue/

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