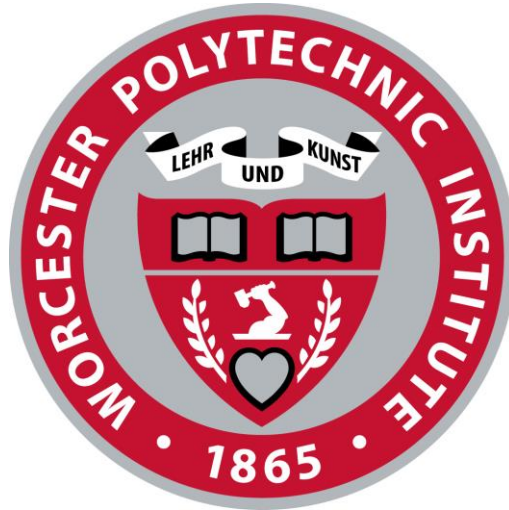


Development of a GM-less Module for D&D 5e



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Worcester Polytechnic Institute
Worcester, MA 01609

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Shawn W. Finnigan

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Abstract

This study assesses the flaws associated with the role of game master (GM) in tabletop role playing games (most notably Dungeons and Dragons Fifth Edition) and experiments with the restructuring of an adventure module to be GMless as a solution to these flaws. This module's structure was determined by literature review and post- usability testing surveys, as well as concepts I have learned throughout my time studying PW, such as accessibility and structured authoring.

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1: Introduction

In the world of tabletop roleplaying games (TTRPGs), few names have become as thoroughly associated with the genre as Dungeons and Dragons or “D&D.” Dungeons and Dragons, which has been around since the mid 70’s, has remained the single best-selling TTRPG for years. While D&D has seen commercial success and has become a household name of sorts, actual gameplay has been thoroughly confined to its niche within the TTRPG community; of the many people that have heard of it, far fewer have played it. However, with the continued success of shows like “Stranger Things” and online streams such as “Critical Role,” D&D has recently accrued unprecedented mainstream attention which has caused a sizable boom in sales but a subsequent shortage of a valuable resource: GMs.

In the field of TTRPGs, many games require a player to assume a special administrative role known as the Game Master (GM). While different games may have different names for this role and subtle differences, the role itself remains largely the same. The GM is responsible for learning the vast rules of the game, arbitrating when those rules are to come into play, and determining how the fictional world responds to players actions. It is widely agreed that the role of GM is a demanding one, which many will not find quite as entertaining as being a normal player. In the past, this has not been a problem because the ratio of experienced players (capable of being GM) to inexperienced players was suitable for the D&D framework. However, with an influx of inexperienced players, it has become increasingly difficult for GMs to accommodate the number of players. This issue is compounded by the numerous barriers to entry into the role of GM and a negative perception of the role that makes many players unwilling to take up the mantle themselves.

Throughout this document, I explore the issues associated with the role of GM. As this study is being conducted alongside the creation of a DnD Module, I will also delineate how my research into this topic influenced the GM-less functionality implemented in our module.

2: Background

In this chapter, I will explain the function of GMs and game modules and the flaws associated with both, contextualizing the reasons for conducting this research and development.

2.2: The Function of a Module

In D&D, players embark on an adventure that is expected to take several sessions of gameplay, which we call a “campaign.” Typically, before a campaign, the GM conceives of an adventure hook, world, and characters, which the players are going to experience themselves. To do this well requires a significant amount of time and planning, on top of the in-game demands such as remembering rules or adjudicating the results of player actions. To aid GMs, writers create “modules” which are pre-written documents that provide a world and adventure for the players to experience. These modules eliminate much of the demand placed on GMs and are a staple choice for new GMs to get acquainted with the role without taking on all the responsibilities. Typical content found in a module includes a story, pre-written character dialogue and responses to player questions, dice rolls, balanced combat encounters, and visual aids such as maps and tables.

2.3: The Flaws with Module Organization

D&D modules are intended to aid the GM in running their game. While modules do save time when it comes to world building and character development, they often present a secondary challenge when it comes to navigating them. On page 137 of *The Creation of Narrative in Tabletop Role-Playing Games*, Author Jennifer Grouling Cover reports difficulties translating

the D&D module she was running, with its encounter structure and lists of non-player character (NPC) skills, abilities, and recommended combat tactics, into something resembling “an interesting story.” (White et al., 2022). This is because D&D modules are often written in a manner more akin to a novel than a guide, leading many to believe the modules are meant to be read foremost and played second.

These organizational qualms are not limited solely to inexperienced GMs. One of the most liked and awarded posts on the Reddit forum r/dndnext (a forum that describes itself as “the premier subreddit for all things related to Dungeons and Dragons, 5th Edition”) is titled “Dear WotC (Wizards of the Coast, owners of D&D) and other authors, please stop writing your modules like novels!” The author goes on to say “I’m so sad to see new potential Dungeon Masters pick up a published 5e module, and just go ‘Oof, this looks like a lot of work.’ I want, ideally, a new DM to be able to pick up and just play a module ‘the way it’s intended’, just after reading 10-15 pages, if that much.” Given that this post is among the top 20 most active of all time, on a forum of 750K D&D enthusiasts nonetheless, it is worth seriously considering this evidence of a legitimate issue.

2.4: The Role of Game Master

The GM is a position unique to the TTRPG genre. In D&D, the primary role of the GM is determining how the world responds to the actions of the players. If, for example, a player wishes to ask a non-player character for information, the GM is responsible for roleplaying responses from said character. They are also responsible for simulating combat decisions made by enemies, calling for players to roll dice in certain events, and, if the group is following a pre-written module, accounting for any and all actions or events which take place outside the written and accounted for content.

The job of GM does not begin or end with gameplay, however. To host a TTRPG, the GM must familiarize themselves with complex rule schemes and sometimes even conceive an entire playable narrative on their own.

2.5: Flaws with the Game Master System

The role of GM is widely considered to be incredibly demanding. “Playing the role of Dungeon Master can be a rewarding job but it is sometimes thankless, and always taxing. D&D can be overwhelming to any new player; this is especially true for a GM, who needs to know all the rules, adjudicate them, create or manage the story, plan logistics for their group, and cater the experience to what each player wants. The amount of effort involved makes it inaccessible for new players and difficult for experienced ones to sustain long-term.” (Solotaroff-Webber, 2022) It is important to note that these demands are not strictly intellectual, but also require a degree of creativity and skill in improvisation that not all players will be capable of. “While a player character may just choose how their character acts and reacts, the GM manages a whole range of narrative, dramatic, and educational faculties. It is a high-bandwidth position and, therefore, can be more asymmetrically tiring.” (Bisogno, 2022).

Controlling the entirety of the narrative, dramatic, and education faculties also has the secondary problem of putting players at the whim of the GM. It is inevitable that however hard one might try, one person overseeing all the narrative direction is bound to insert their own biases into an adventure, limiting the range of experiences the players will be exposed to. These issues are less prevalent in GM-less games because every player shares power and is given equal opportunity to manipulate the narrative. “...this central figure is not necessary for evocative play and a group’s imaginative capabilities. Games without a Game Master, “GM-less” games, often aim to expand avenues of creative input and liberate a table from the aegis of a single member’s directorial aesthetics.” (Bisogno, 2022)

3: Research Methodology

In this chapter, I outline and explain the methods I employed in researching issues with the GM system, alternatives to it, and how to construct a GM-less module.

- Literature review
- Usability testing
- Surveys

3.1: Literature Review

Via literature review, I familiarized myself with the following topics:

- The existence and significance of flaws with the GM system
- Potential alternatives to the standard GM system
- Issues with modules

By researching issues with the GM system, I will first broaden my understanding of the underlying problem I am trying to solve and confirm that said problem is truly prevalent. Once I am confident I have correctly identified the issue, I will explore potential alternatives, enabling me to decide which solution seems most viable for this project. From there, I will need to learn how to construct a high-quality module of my own while also rectifying flaws the TTRPG community perceives in published modules. By researching these topics via literature review, I will be able to make informed decisions when determining the best solution to the problem and when constructing the module.

3.2: Usability Testing

Once the module is completed and an alternative GM'ing system has been implemented, I will assemble groups of players with varying TTRPG experience to test the module. By having inexperienced players try to module, I will be able to determine how navigable and accessible the module is. I also expect that those without a background in TTRPGS will have a unique

perspective untainted by biases or what they consider to be precedent for the genre and/or D&D 5e.

Conversely, the module must also appeal to those familiar with the genre. By having TTRPG enthusiasts try the module, I can see how well they consider an alternative GM'ing system to compare to the industry standard human GM system. Their experience will also allow them to suggest much more specific solutions to the flaws they perceive within the module.

Usability testing will be conducted as follows:

1. **Introduction:** Players will be greeted and given background on the module and purpose of the study. I will ensure during this step that they know that any roadblocks they run into are the fault of module, and that identifying these roadblocks helps us improve it, hopefully lowering their guard and preventing them from feeling insecure should they get stuck.
2. **Preliminary Questions:** I will ask the players about themselves, namely their experience level with TTRPGS, as this information is crucial for framing how frequent questions and responses might have correlations with experience level.
3. **Testing Phase:** I will ask the player to play the module and speak aloud any thoughts or questions they have as they move throughout, taking note of all their thoughts. I will not answer any questions during this phase unless they are truly unable to progress without guidance.
4. **Probing Phase:** I will ask them questions about anything significant I noticed throughout the test. These questions will be changed organically as we get more usability testing data. For example, if one player does not seem to struggle with an area many others do, I will ask them about that.
5. **Wrap-up:** I will thank them for their time and refer them to the post-testing survey. I will also ensure playtesting credit is distributed as needed and that they had signed the informed consent form to have a portion of the information gathered during these tests shared.

To assemble inexperienced groups of usability testers, I will reach out to WPI students via mass email, offering playtesting credit to those who participate. To assemble experienced groups, I will be attending colloquiums and reaching out to other connections throughout the IMGD department to participate in play testing.

3.3: Surveys

I will be administering surveys immediately following playtesting, enabling me to gather

qualitative data about the module from the play testers. Because the testing groups will be of varying degrees of experience, the survey questions- which are provided in the appendices- will consist of primarily multiple-choice or 1-10 rankings. By administering the surveys, I hope to determine how well implemented the alternative GM function is and how entertaining the module is overall.

I will then use this feedback to make informed changes to the module and to help determine whether my chosen alternative GM framework can truly be implemented into a game initially designed for the traditional human GM system, such as D&D 5e.

4: Research Results

This chapter highlights the most important findings that resulted from the literature reviews, playtesting/usability tests, and surveys.

4.1: Literature Review

The results of the literature review conducted on the topics listed in research methodology.

4.1.1: Researching Flaws with the GM System

Following the release of media such as *Stranger Things* and later the COVID epidemic leaving millions confined to their homes, there was an explosive 600% increase in “How to play Dungeons and Dragons” searches (Selcke). In conjunction with the spike in searches, D&D sales jumped by one-third in 2020, which exacerbated an age-old problem: the Game Master shortage. Across the US and Canada, game stores hosting D&D campaigns were also affected by the influx of interested players but found themselves short on GMs to host them. This prompted stores, such as Hex&Co in New York city, to pay full-time game masters to host their games (Solotaroff-Webber). The role of GM is an incredibly demanding role. “D&D can be overwhelming to any new player; this is especially true for a DM, who needs to know all the rules, adjudicate them, create or manage the story, plan logistics for their group, and cater the experience to what each player wants. The amount of effort involved makes it inaccessible for new players and difficult for experienced ones to sustain long-term.” (Solotaroff-Webber). Another issue is that a GM being responsible for managing the world and story can limit the variety of experiences available to the player, both due to the GM’s competency at forming a narrative, and because it’s difficult for them to set their own biases/directorial aesthetics aside. (Bisogno)

4.1.2: Researching Alternatives to the GM System

One alternative GM people have been considering is AI. With the recent release of ChatGPT-4, people have been experimenting with AI taking on the role of a human GM. GPT-4 has been successful at fulfilling many of the roles of GM, such as, when prompted, generating characters, worlds, quests, and dialogue. It can even, albeit imperfectly, remember information that was submitted to it and which it has produced to be referenced later (Murray). Further back in 2019, a programmer by the name of Nick Walton created a novel simulator game called *AI Dungeon* as part of a hackathon. The software, which used GPT-2 as a foundation, simulated the role of a GM, albeit with varying results. The game’s creator even said that he believed there was still a ways to go before AI could replace the role of GM (Minh).

Another alternative was to make the game functional without a GM at all. Throughout my research, I discovered there to be plenty of precedent for this in the world of TTRPGs. In the

(optionally) GMless game known as *Ironsworn* players may elect to forego having a GM, and instead share various aspects of the role between players. This is not the same as breaking the role down into smaller components however, because performing aspects of the role of GM is ingrained into the mechanics of *Ironsworn* such that performing those duties is just participation in gameplay. The game accomplishes this by structuring gameplay to follow a roleplay heavy flowchart where players declare actions until one action meets the criteria of a “move.” Then players roll dice and determine what happens from there with assistance from tables and the minds of their peers. The actions the players perform and how the world responds to those actions, are left entirely up to the players themselves.

The final option I researched was to create a module which follows a “choose your own adventure” structure which was used by several published but nevertheless unofficial GMless modules for D&D 5e, such as *To Hell and Back Again*. This structure involves breaking the narrative into beats, and then creating branching paths from those beats that then reconverge at the next major beat. This structure has the benefit of not requiring too many external tables and doesn’t diverge from the adventure books that D&D players are already accustomed to using.

4.1.3: Issues with Modules

Officially published D&D 5e modules have come under scrutiny in recent years. On the tabletop gaming website *Flute’s loot*, a writer under the pseudonym “*DragnaCarta*” wrote an article on reformatting officially published D&D modules to be more useful to GMs. In describing the functionality of these modules, the author says “At their best, official modules are disorganized, forcing DMs to kludge together information from multiple sections. At their worst, they’re actively hostile, drowning essential details in a flood of irrelevant information.”

Even experienced TTRPG enthusiasts and writers struggle with the organization of D&D’s modules. Author Jennifer Grouling Cover noted that she failed to assemble the various elements of the module she was running into something resembling an “interesting story” (Cover).

4.2: Usability Testing

Usability testing indicated a positive response to the module in terms of navigability and beginner friendliness. Most players were able to navigate the module from beginning to end without reaching a roadblock they could not reconcile on their own. In the limited multiplayer tests we were able to conduct, each player felt that they had the same amount of responsibility for handling the administrative aspects of the game, though they did note that the number of

routes limited the amount of decisions a given player would be able to make in a game.

This issue of player agency was prevalent throughout our usability tests. As, unlike a human GM, a GMless module cannot account for every action a player might want to do, players found themselves wanting to not only solve problems in diverse ways but wanting to pursue solutions in a different order than the module allowed for. This issue was especially pervasive in experienced play testers, who were accustomed to that degree of agency.

When asked post-playtesting, many players also found that the module was truly helping them avoid a GM's biases. Not only are they still subjected to the biases of someone- in this case the module's creators- but it is people they are unfamiliar with. Some players expressed the merit that it is sometimes less frustrating when a friend is laughing along with your failures, as opposed to a cold module merely prompting them to try again or give up.

4.3: Surveys

The surveys given post playtesting (appendix B) echoed what was learned during usability testing. Many players said they found the module navigable and the story engaging. However, despite the number of players who found that the module was easy to follow, many felt that simplicity came at the cost of individuality. One player said that the lack of a GM (and thus the simplistic structure) “removes key elements of exploration and discovery in tabletop games.” Players wanting more branches and less linearity became the single most recurring datapoint. Another piece of significant data was that navigability and playability were two different things. Players followed the various branches, but sometimes were unsure how to complete various checks or, especially, perform unprescribed actions, a mechanic which is delineated in the intro

of the module that allows players to break from the branching paths temporarily.

5: Conclusions

In this section I cover the conclusions drawn from the research results and how I used those conclusions to iteratively improve the module.

5.1: Literature Review

My research was conclusive in proving that not only was there a shortage of GMs, but that this shortage is not caused solely by a massive influx of players, but also by inherent flaws with the role of GM. The studies I looked at indicated that the role of GM is demanding and with very little payoff, driving many potential GMs away. The specific duties assigned to the role also create considerable barriers to entry. A GM's duties are best performed by someone who also has experience, causing a cycle where players can't get experience without a GM, yet nobody wants to GM because they feel they are too inexperienced. And finally, even experienced GMs ultimately subject their table to their ideal adventures, complete with personal biases. A GM's biases might manifest in narrative direction, but also can extend to player favoritism as well. Given these factors, I do believe that it is worth pursuing alternatives to the standard human GM model.

There are plenty of alternatives to a standard GM. AI seems like it will become a successful alternative in the future, however, even experts in the field deemed it too unreliable to replace our human GMs in its current state. Furthermore, I'd need to do significant technical research in order to implement AI as a solution to these issues which would have been a dangerous scope to commit to. The second option, splitting the role of GM between multiple players was much more viable than AI. However, the primary issue is that its unique structure is dissimilar to anything a D&D player is familiar with, and it might become too alien to the established D&D playerbase.

Both because of the critical flaws with the previous two options, and because the GMless "choose your own adventure" module was proven to work for D&D 5e, it was the most logical choice to test.

5.2: Usability Testing

Given how few players struggled with moving throughout the module and in performing the D&D 5e mechanics, GMless modules do seem to excel in the areas of accessibility and navigability.

The highest priority issue I knew I needed to solve from usability testing was player agency. However, solving an issue which is inherent to the very structure of the module would have required that I start (almost) from scratch, which was out of scope. Instead, I concluded that I should reinforce the mechanics that allow players to extend beyond the prescribed boundaries of the module. I created note boxes below certain checks to remind players that they have the capacity to do so, and also wrote a more detailed description of how to use these mechanics in

the introduction.

Given the GMless module's success as a tool for learning D&D mechanics, especially with inexperienced players, I think it will function better as a learning tool that will enable players to become GMs in the future, moving on to standard modules. This idea was corroborated by players during usability testing and even from onlookers when it was brought to the IMGD colloquiums.

5.3: Surveys

As stated in research results, the surveys echoed the data collected during usability testing. However, they did provide unique demographic data by demonstrating how inexperienced even TTRPG players are with GMless games. Not a single player of ours was experienced with GMless games, yet nearly all of them succeeded in navigating them effectively. This lends extra credence to the concept that GMless games are highly accessible to inexperienced players.

6: Recommendations

In this section I recommend various technical and design elements that I believe should be incorporated when making a GMless module. As my time working on this project was limited, I also recommend features I was unable to implement, but which I believe should be incorporated into future modules.

6.1: Implemented Recommendations

- **Exposition and Cohesion:** D&D is a game that is typically heavy on exposition. However, without a human GM to improvise, it's important that the written descriptions of the world are 1:1 with the visuals depicted in maps or graphs. If you describe a dusty collection of crates in detail, players will assume them to be important. If they are not important or even reflected at all in the maps, players might find themselves confused or disappointed.
- **GMless modules as a learning tool:** Restricting player agency reduces an inexperienced player's "burden of choice." This allows them to focus on learning the mechanics of the game through experience, making assuming the role of GM (or even that of an unassisted player) less intimidating in the future. As the testing showed that players don't foresee this specific GMless solution replacing future GMs, I suggest leaning into this strength.
- **Language Selection:** When multiple paths lead to the same place, it becomes hard to write narrative that accounts for all of the possible routes a player may have taken to get there. In these situations, I recommend neutral pronouns and generalized descriptions of events that can apply to all of the possible routes. For example, if players are to meet the villain, and the two possible routes were killing all his henchmen or sneaking past them,

it's important that the dialogue with the villain is generalized such that it makes sense regardless of how the player got there.

6.2: Recommendations for future projects

- **Increase number of branches:** Testing proved that GMless modules of this structure inherently hinder player agency. Bolstering the number of options available to the player will help this GMless format feel less like a burden on the experience goals of TTRPGs.
- **Set a baseline:** In this study, comparisons were often drawn between the navigability of the GMless module and standard modules. While literature review can prove that people find modules are hard to navigate, collecting your own data by offering players some portion of a published module first will allow for more significant comparisons to be made.
- **Alternative GMless formats:** I would suggest exploring some of the alternative GMless structures I researched in the future. I believe that many of the shortcomings of the module I created were not the result of the GMless format being non-viable, but rather that my chosen structure of GMless module was not as efficacious as other solutions. The Ironsworn model of GMless game seems that it would allow for the degree of freedom and flexibility that the players were wanting for.
- **Incentivize player interaction:** As it stands, GMless modules of this structure function best as solo modules. Adding additional mechanics to make players collaborate and ensure everyone is participating equally is imperative if this is intended to truly replicate some of the higher functions of a GM. Solutions to this which I was unable to implement include creating skill-checks that are impossible to complete with just one player, or randomly generating player names for certain events, allowing each player a moment in the spotlight.
- **More visuals:** While giant walls of text can be broken up by tables and other “functional” visuals, beginner modules like this would be better served by more visuals to contextualize the characters and locations they are seeing.
- **More usability testing:** One of the largest shortcomings of this project was a failure to

accrue more playtesting hours. Iterative design cannot exist without usability testing. Ensure that you get a wide range of usability testers, and that each session puts every element of the module under scrutiny.

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Appendices

Appendix A:

IRB Informed Consent Form: "Exploring the Crossroads: Augmented Reality and Tabletop Role-playing Games."

You are being asked to participate in a research study. Before you agree, however, you must be fully informed about the purpose of the study, the procedures to be followed, and any benefits, risks or discomfort that you may experience as a result of your participation. This form presents information about the study so that you may make a fully informed decision regarding your participation.

This study is being conducted to determine if our module, a playable Dungeons and Dragons 5e adventure with augmented reality components, is entertaining, easy to follow, and overall a cohesive piece.

This playtesting study will be conducted for up to one hour, with a maximum of 50 minutes of play, and ten minutes to take the post-playtesting survey. The researcher administering the study will be keeping track of time.

During the study, the playtester will play the module, attempting to follow the rules as written. While playing, the playtester will, to the best of their ability, voice their thought processes as they move throughout it. The researcher will record these thought processes and use them, in conjunction with the post-playtesting survey, to improve the module.

This study will not put the subject at any risk of bodily harm. While the content is relatively tame, subject matter warnings are nevertheless included at the beginning of the module in the

Introduction -> Content Warnings section, so participants know what potentially triggering topics will be covered.

The records of this study will be stored in a google drive to which only the researchers on this project will have access to. Once the research paper has been published, any information not included in the paper will be summarily deleted. Records of your participation in this study will be held confidential so far as permitted by law. However, the study investigators, the sponsor or its designee and, under certain circumstances, the Worcester Polytechnic Institute Institutional Review Board (WPI IRB) will be able to inspect and have access to confidential data that identify you by name. Any publication or presentation of the data will not identify you.

You do not give up any of your legal rights by signing this statement.

For more information about this research or about the rights of research participants, contact:

Head Researcher: Shawn Finnigan

Tel. 781-460-3194

Email: swfinnigan@wpi.edu

IRB Manager: Ruth McKeogh

Tel. 508 831-6699

Email: irb@wpi.edu

Human Protection Administrator: Gabriel Johnson

Tel. 508-831-4989

Email: gjohnson@wpi.edu

Your refusal to participate will not result in any penalty to you or any loss of benefits to which you may otherwise be entitled. You may decide to stop participating in the research at any time without penalty or loss of other benefits. The project investigators retain the right to cancel or postpone the experimental procedures at any time they see fit.

By signing below,

you acknowledge that you have been informed about and consent to be a participant in the study described above. Make sure that your questions are answered to your satisfaction before signing. You are entitled to retain a copy of this consent agreement.

Signature: _____

Appendix B:

Survey Questions:

What did you like most about the module?

5 responses

Had an interesting story and a really cool AR mechanic

I enjoyed the custom setting, and the 3D terrain was very cool

I was curious about the monster the kids talked about

The multitude of options I had story wise

The AR map was neat.

What did you dislike?

5 responses

Seemed a bit linear in nature

The choose your own adventure style made the freedom of the game seem restricted

Nothing in particular

not very newcomer friendly

The intended gameplay feels restrictive in an unconventional sense. The module says that one can come up with their own answer to each presented problem, but there isn't much reason to deviate from the provided answers.

What suggestions do you have to improve the module?

5 responses

could give players a bit more agency

Make it clear what happens when something doesn't go to plan

Maybe adding more options to some of the branches

More instructions for people unfamiliar with DND

The AR map needs to be more than just a map. Tools to assist in exploration, greater depth, and a built-in dice roller seem like logical additions.

What aspects of the module made it more or less easy to follow as a player?

4 responses

Easier, but at the cost of individuality

The tag system (A4/A10) made it easy to tell where to go next

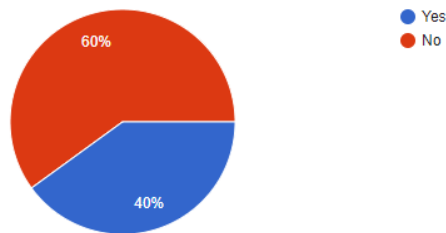
Instructions on where to go and what to roll

The lack of a GM, while intended, removes key elements of exploration and discovery in open-ended tabletop games. This is a fundamental flaw.

Do you find it difficult to find a GM/DM for tabletop games such as D&D?

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5 responses



If you prefer to **not** GM when you play tabletop games, why?

3 responses

I am not the best at describing areas in detail

I don't play DnD so I have no idea how to GM

GMing is an absurd amount of work, which is typically done for pleasure, not profit. Most good DMs usually don't have the time to engage in the hobby as deeply as they would like.

Do you think GMless modules would be a viable solution to a shortage of GMs?

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5 responses

