Exploratory test adventure - a creative, collaborative learning experience

Testing is an activity that can be highly creative. In order to improve learning and testing we see improvisation as an important aspect. Improvisation can be done in many ways, the one we advocate is that of storytelling or role playing. It is our belief that by taking aspects of storytelling into the world of collaborative testing we can increase our creativity. This is what we call an exploratory test adventure.

> **Testing** is something that we do with the motivation of *finding new information*. **Testing** is a process of *exploration, discovery, investigation, and learning*. When we configure, operate, and observe a product with the intention of evaluating it, or with the intention of recognizing a problem that we hadn't anticipated, we're **testing**. We're **testing** when we're trying to find out about the extents and limitations of the product and its design, and when we're largely driven by questions that haven't been answered or even asked before."

We begin with a definition of testing by Michael Bolton, quoted from the blog article Testing vs. Checking [1] describing the extent of what testing could be. This definition highlights the aspects of the explorer or the adventurer, seeking new endeavours and finding new information about the world. We like the idea of being an adventurer who is out exploring searching for treasures, wearing the Indiana Jones kind of equipment, instead of the forgotten clerk behind the desk turning papers.

One form of improvisation can be done through storytelling games. Here is one definition of story telling games:.

> A storytelling game is a game where two or more persons collaborate on telling a spontaneous story. Usually, each player takes care of one or more characters in the developing story. Some games in the tradition of role-playing games require one participant to take the roles of the various supporting characters, as well as introducing non-character forces (for example, a flood), but other systems dispense with this figure and distribute this function among all players.

> Since this person usually sets the ground and setting for the story, he or she is often referred to as the "storyteller" (often contracted to "ST") or "narrator". Any number of other alternate forms may be used, many of which are variations on the term "gamemaster"; these variants are especially common in storytelling games derived from or similar to role-playing games.

> In contrast to improv theater, storytelling gamers describe the actions of their characters rather than acting them out, except during dialogue or, in some games, monologue. That said, live action versions exist, which are very much akin to theater except in the crucial absence of a non-participating audience.

This quote is taken from wikipedia [2], which we see is fairly accurate in explaining what this is about. Notice the similarity with what we do when testing in a group, but where we as testers refer to it as telling a testing story. Something that is rarely seen in testing

though is that the tester acts out in full the role in a specific situation. When testing like a specific user or trying to figure out what happens when encountering a specific event or obstacle, using the concept from storytelling games can help enhance the testing by letting it be more creative and if nothing else a lot of fun. When playing roleplaying or storytelling games you have a gamemaster or a storyteller. In testing we might instead have a coach, moderator, test lead or someone leading the exploratory test adventure. Just like storytelling, you rarely act on out in full when testing but instead simulate and act as if you were the user.

What is an Exploratory Test Adventure?

Participants

As in traditional storytelling games we need to put together a number of participants with different roles. First we have the *storyteller,* in this case the test lead, coach or similar function. The storyteller is the one who leads the event and paints the main picture in which the participants should act in. Even though the participants should have some freedom to take the event to where they see fit the storyteller should always be there and guide them if they stray too far from the intended purpose. Secondly, we have the *players*, in this case the testers. As in collaborative testing the number of people participating can vary depending on situation. Thirdly we have other participants that for example might be observers and developers that can give and gain direct feedback and contribute with ideas on where to proceed in the adventure. Depending on what kind of team you have the participants and its observers will be differently composed. If you are in a cross-functional team, you should consider which roles the business analysts and the developers take on so that everyone step out of their comfort zone to increase the possibilities of the outcomes. Developers and business analysts could be observers of how the system or solution is actually used, how the participants play out a specific scenario. This could be an excellent way of getting early feedback on design and intended use.

Scene

This is basically the environment the participants are expected to act in. This could very well simply be the usual "test lab" but there might be some benefits to actually put the testers in a fictive situation. For example, the scene could be a pilot roll out with a certain department that is expected to use the application in a certain way. It is up to the Storyteller to create the scene and add background, actors and other details that are important to the participants. The more detailed the scene is, the better the creative experience will be for the participants. By bringing in events that might have happened in real life, the scene can become even more real. Replaying a scene that has happened to the storyteller can bring an interesting learning experience for all involved. Participants might do something completely different from what the storyteller did in the first place.

Time

In role playing and story telling games you usually know the time limit. It might be a short scene that you act in only meant to be played for a few hours. Then you might have what is called an adventure that could be played out in several occurrences. The last one is a campaign which plays out during a longer time of many occurrences. We've only tried out the shorter versions when applying this to testing. It all depends on what you wish to learn and what you want to play out. The campaign timeline would fit when teaching

students for a longer time, while the short hour version is applicable to events such as the testlab on conferences.

Mission

As with any game or adventure there usually is some goal that lures beyond the horizon. This gives a sense of motivation and pushes the players forward but it is quite common to not have a clear goal at the end of the road. In these cases it is the journey that is important. The end goal might very well change during the course of the adventure due to different events, for example the discovery of an area with unexpected critical issues. This will most likely shift the mindset of the group. The ultimate goal might be obfuscated by lures that keeps the participants astray or in confusion. Getting on the right path, as far as they know, can then be one of the sub-goals. There is an infinite number of ways this can be set up.

Roles

A storytelling game usually puts each player in a fictive character and this ties into the notion that testers could, or should, think in different ways. For testing we instead play a certain persona or role and act in their context. The available roles are closely connected to the scene created by the Storyteller. Something rarely seen in testing is the usage of character sheets when testing like a specific role or persona. A character sheet is a collection of background, skills, abilities and other useful information about the character. This could be made open to everyone or kept secret, these aspects and motifs of the personas will most likely lead to interesting discussions and reflections during debriefing. It can also contain information about how certain relations are between other roles or personas that might hinder or help the group. This might enable the tester to delve even deeper to understand the boundaries and limitations in which one character can act.

Paths

In an adventure the storyteller sometimes introduces an important intersection in the story. In some cases the paths look obvious, but it is up to the participants to try to choose their own paths. The storyteller should encourage creativity that may alter the path or break free in new directions that none had considered. In this way the whole group will be able to improvise in a situation that is unplanned and where it is uncertain where you end up. These unexpected twists and turns also gives the Storyteller a chance to hone their creative skills.

Interrupts

At any time during the exploratory test adventure the moderator may call for the attention of the participants, which pauses the scene. These interrupts may be pre-planned or invented along the way. One reason to do this could be to get the testers back on track if they deviate from set goals, another may be to just stop and do a quick reflection on progress so far. While yet another could be to zoom out and move an imaginary camera to another context to show something happening that will affect the participants, as a flare of bringing the story onward or letting them know something wicked is coming their way.

Reporting

In some role playing games the participants keep a journal on what happens, who said what and new plots that appear. Over time there is a need to keep track on the many events. This is quite similar to how sessions or threads are documented in SBTM or TBTM. The most interesting result is when many parties tell their story in these journals, making it obvious that everyone experience different things.

Events

The moderator may have certain events pre-planned that are designed to trigger new ways of thinking within the group. An example of this could be that the moderator describes what is going on during a meeting elsewhere between Project Leader and Manager that most likely will influence how the group acts. Another example is to have an invited guest come along with a different agenda to disturb the groups testing session. There can always be ulterior plots and events that are happening that might enhance the adventure or set obstacles in the way of the participants.

Examples of Exploratory Test Adventures

Let's TestLab 2012

In the Testlab there were three tables that focused on one system each. Each table also was a team led by one team lead. The first objective given out by Martin and James was to find do collaborative test planning in the teams finishing with a debrief on what they had come up with. At this stage there were no interruptions. The next part was actually investigating what they had planned. During this session Martin interrupted and introduced a scene in which the test lead appeared on his way to a release meeting. He had just a few minutes before he needed to attend, so each team needed to quickly create a report on the most important issues and present them to Martin. The diversity in how the teams presented was very interesting. Some of the team members and some of the listeners thought the learning experience was great.

The TestLab was filling with over 50 people. The original plan was in the trunk. Each table consisted of at least 5 testers, then there were many who stayed in the background listening and discussing what was going on. The scene was set by stating that they were testing teams, Martin and James took on the roles of project manager, line manager, test leads and CEO. Martin and James had from the beginning stated that they would go around the tables and say different things, thus contradicting each other. Present were also Ilari Henrik Aegerter and Anne-Marie Charrett who did coaching. There was great confusion in the teams since they were split between the objectives given out by Martin and James, while they at the same time wanted to work on their own agendas and while Ilari and Anne-Marie were trying to get their attention in coaching. All of us were improvising, the scene (what we thought it was) was changing and evolving all the time. During the whole session there were a few interruptions that presented the scene and its actors with new information, on which they could act on. During one of these interrupts Martin, as a project manager, asked why the teams were using the coaches, they had so much testing to do and so little time! This changed the teams focus and removed some of the confusion.

The experience was very different for the participants, but it seemed many enjoyed it and some learned more than others. (See [3] for further details)

Other disciplines that could inspire us

If we look into the world of organisation theory, there are movements that also investigates ways to become more creative. Here are a few quotes from the article Improving Case Discussion With an Improv Mind-Set by Andy Aylesworth [4] that align well with our thinking of improvisation in testing.

> "To understand better and explain the phenomenon of organizational improvisation, scholars have turned to improvisational arts, specifically theater and jazz, where improvisation is the norm, rather than the exception."

> "Improvisational theater has been invoked to better understand business innovation, management, collaborative technology, and team performance."

> "... employees to attend improvisational theater classes, believing that such classes will lead to better, more productive, and creative employees."

By improvising they can explore a concept and try new ideas to better understand and perhaps learn something new. The concept comes from that of a Case study, which is very alike that of running a scenario or setting up a scene to act in. The author thinks the use of improvisation inspired from the theatre would increase creativity when using the Case study technique. He also believes that participants, who usually are either rowdy or shy, might step out of their usual role and act in a different way. Participants in an exploratory test adventure would probably have a similar experience.

When you take on a role that you might not otherwise have experience from, you need to consider new things and explore the boundaries in which you can act. In this situation your creativeness is key.

The book Body and Language: Intercultural Learning Through Drama edited by Gerd Bäuer [5] highlights several aspects regarding improvisation that aligns well with our ideas on exploratory testing adventures. Here is a section that is especially interesting from that book:

> "At least until computers can recognize and represent aural human speech a lot better than they can now and can be programmed to respond spontaneously to speech (which I, for one, don't believe will ever happen), one cannot learn to creatively engage in a conversation in a language unless one has real human beings to interact with. Audiotapes and computer language programs can help one learn certain common exchanges or routine phrases, but to learn how to improvise new utterances one has not yet heard, at least one other speaker of the target language is needed. This is why informal improvisation drama activities are so powerful in the foreign-language classroom. To participate in an improvisation, one needs to use the body not only to produce appropriate language but also to express emotion and ideas through gesture, posture, and facial expression. Because the scene in a drama is an imaginary one, the participant is free to exaggerate or assume a persona that frees him or her to experiment with a wider range of language that ordinary exchanges might evoke. Improvisational drama is effective because of the repeated pressure it puts on participants to respond. It is not enough for students to hear the target language spoken; they need to talk themselves."

Notice the implication that by stepping out of your everyday situation into a context where you are not familiar and where your usual boundaries lie, you instead visit a world which can be explored in many different ways. All participants are part of exploring this new world and act in it according to their own set of beliefs and objectives. We see that the complications in learning new languages and the experimentation using improvisation align well with the complications of creating an environment that enables creative testing. Cem Kaner has expressed the complexity of teaching testing and many others have argued about the lack of actual knowledge gain by merely studying a curriculum such as that from the ISTQB. We see that there are similarities in teaching to express yourself in a new language with that of performing creative, context-driven testing. As you might figure out, improvisation and following a script does not go hand-in-hand.

Another concept that is very applicable to the exploratory test adventures is that of Experiential Learning. Gerald M. Weinberg has recently written a book about this, but you can also find lots of interesting blogs and such on the topic as well. David A. Kolb has researched a lot on this topic.

> "David A. Kolb (with Roger Fry) created his famous model out of four elements: concrete experience, observation and reflection, the formation of abstract concepts and testing in new situations. He represented these in the famous experiential learning circle that involves (1) concrete experience followed by (2) observation and experience followed by (3) forming abstract concepts followed by (4) testing in new situations (after Kurt Lewin). It is a model that appears time and again."

A quote from an article by Smith, M. K. (2001) on 'David A. Kolb on experiential learning' [6]. Experiential learning goes hand in hand with that of an exploratory test adventure. By setting up a scene in which we act, with events and encounters that simulate our everyday experiences we will learn new things and enable us to be creative in its context.

Conclusion

To use improvisation to be more creative and to enhance learning is not a new concept, still it is not often seen as part of peoples repertoire. Part of the reason is probably that many testers for different reasons work alone, instead of collaborating. Exploratory test adventures prepare the testers for the unknown by forcing them to go together through various simulated experiences where they need to improvise, which in turn nurtures creativity.

We can even say that the foundation of a storytelling game is improvisation and creativity. This is why we promote that you, as a test lead, team lead or team member, step up and take the role of the storyteller. Play out a scene in which your team members can play an exploratory test adventure!

References

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