

CHAPTER III

FINDING AND DISCUSSION

In this chapter, the researcher presented the finding and discussion of the study. The researcher wants to present the findings and then discuss the research problem based on the statement of the research problems that has been mentioned by the researcher in chapter I.

A. How does the character perform cooperative projects and presentations in the “Spare Parts (2015)” movie?

As the researcher explain above in review of related literature there are several parts that include in cooperative projects and presentations there is cooperative projects, project principles, team project, sharing project plans, sharing project process, sharing products and presentations, and sharing project and presentations. As the researcher want to discuss, researcher observing object activity by describing the composition of the object and rearranging its components to studied or studied in detail. As the character in the spare parts (2015) movie give the information for researcher about this study. After the explanation above the researcher finds that the several parts in cooperative projects and presentations as the character perform in the “Spare Parts (2015)” movie there is:

- a) Cooperative projects



In this scene minutes (12:48 – 12:52) Oscar Vazquez researching about underwater robot competition and watch the video from computer try to learn the ROV, it can be looked in a dialogue while Oscar Vazquez listen carefully the video play in computer “this ROV from last year utilized multiple hinges on its gripper.” This scene shows students are active participants in constructing their own learning which is cooperative projects are the epitome of constructivist education. In the constructivist model, students are not the passive recipients of known facts. Instead, they are active participants in constructing their own learning. Students have unique minds, they are product their nature, their past experiences, and current conditions.

In one side they build their own knowledge in their ability to make a first move run well. Being students that have ability before they work into project is a gift because when the students that have their ability that would be sure for them to share their knowledge into another students. Learning objectives are prioritized on the process, not on the results. Learning process in

any circumstances is to formulate the students into a process being participation in every process. Generally, learning emphasizes to a process how to get the knowledge and then construct their understanding that student ability to find what their desire knowledge.

If teacher using a traditional teaching as they would transfer the knowledge it would be boring teaching because in this era and technology grows so fast, it could be a disaster to students active in class activity.

As the character perform in that scenes we can see how the character uses the computer being construct their understanding about find the new knowledge. Students grows and thirsty being a human that want to know everything. It seems like the students can learn without a teacher in every process but this case is wrong in cooperative project. Cooperative projects emphasize student active engagement to ensure that being held in that project as the teacher announces the team project. The teacher as mediator and facilitator plays a role in providing learning experiences, providing activities that stimulate curiosity, so students get build their deeper understanding of the content that has been provided by teacher as the use cooperate projects as their fun learning. In the process of cooperative project, students discover facts and concepts for themselves.

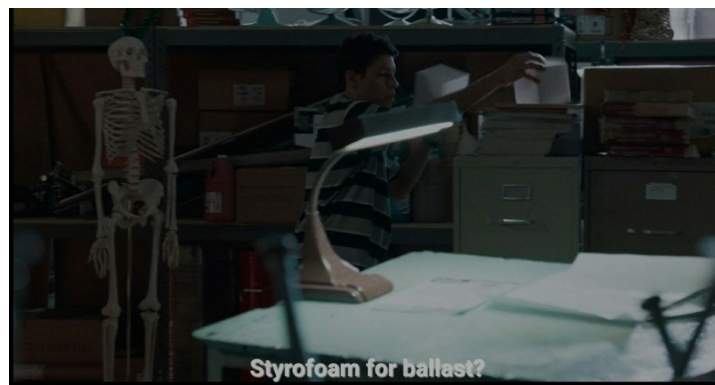
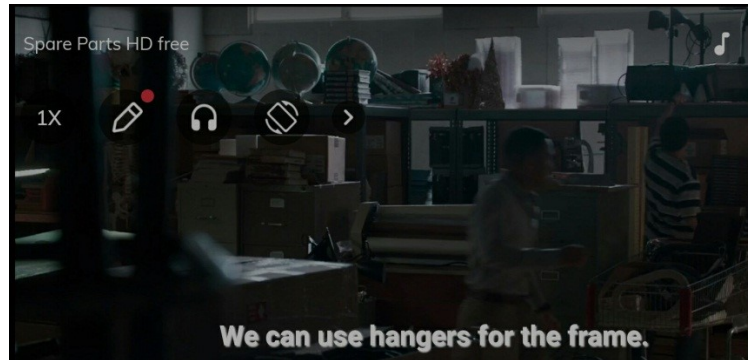
There is also a place for students to be creative, solve real problems, and construct their own understanding in cooperative projects.



In other scene minute (17:19 – 17:26) Cristian, Oscar, and Mr. Fredi in one frame. Cristian explain the design that he made to Mr. Fredi, it can be looked in a dialogue “it’s all to scale... I sourced a grade that’s stable up to 1000 meters.” This scene shows in the process of a cooperative project, students discover facts and concepts for themselves.

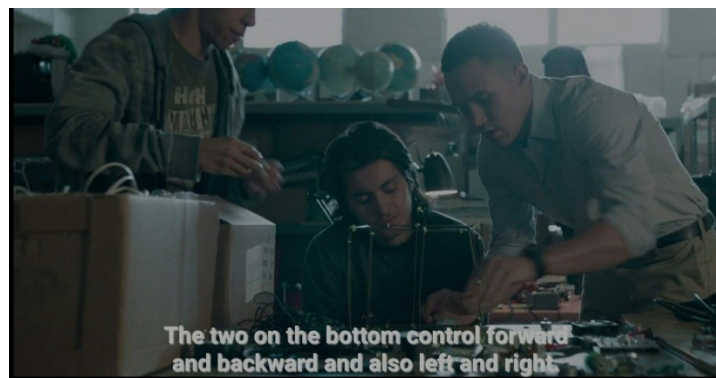
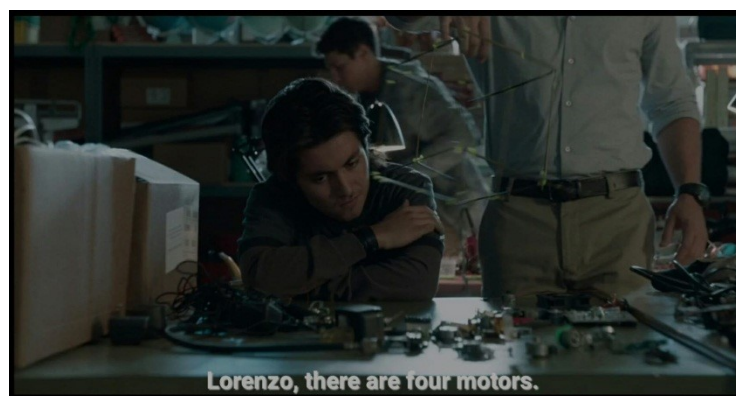
According to Kagan, cooperative projects are perhaps the purest form of constructivist education. As students construct their

projects, they are simultaneously constructing meaning and understanding.



In this scene (17:59 – 18:06) with physical appearance from Cristian and Oscar try finding the material for their project, it can be looked in a dialogue “we can use hangers for the frame.

Styrofoam for ballast? Toggle switches.” Cristian explain his understanding if their project will be build Cristian construct their material with his concept as he said “we can use hangers for the frame” it means he know what he doing because Cristian already constructing meaning to be creative and understanding to be solve real problems and construct their own understanding about the project.



In other scene minute (24:20 – 24:26) it can be looked in a dialogue “Lorenzo, there are four motors. The two on the bottom control forward and backward and also left and right.” Oscar explained to Lorenzo the parts of the material he was going to

build. This scene shows Cooperative projects align instruction with students' natural desire to interact and create.

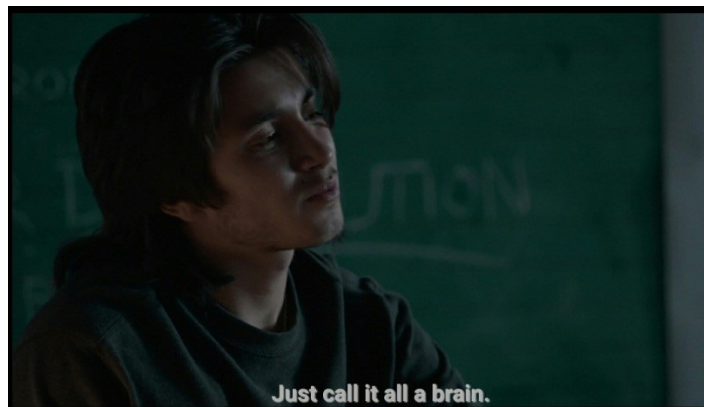
Knowledge is personal as constructivism is based on their students' experiences and they have their own prior knowledge and experiences to bring to the table. According to Vico, knowledge cannot be separated from people who know. Knowledge is the conceptual structure of the applicable observer. So students learn and gain from their knowledge will all be very different. According to Hatta's thoughts is a spirit of work ethic that emphasizes that each individual has their own advantages and is able to build self-confidence so that with individuals like this they are expected to be able to unite the team as work on project in reality. To make progress as human being try to achieve the same goal.

b) Project principles

As students work on projects, they may need a block of time with no teacher intervention. Ideally, students eventually internalize the principles of effective team work.¹ Divide the work fairly, ensure that everyone participates, and make fair decisions. With the principles applied to projects, students can create conditions to promote active engagement and inclusion for all

¹ Spencer Kagan and Miguel Kagan, *Kagan Cooperative Learning*, (San Clemente: Kagan Publishing, 2009), 13.2.

students in all aspects of cooperative projects. As the characters perform in a several scenes that researcher has taken.

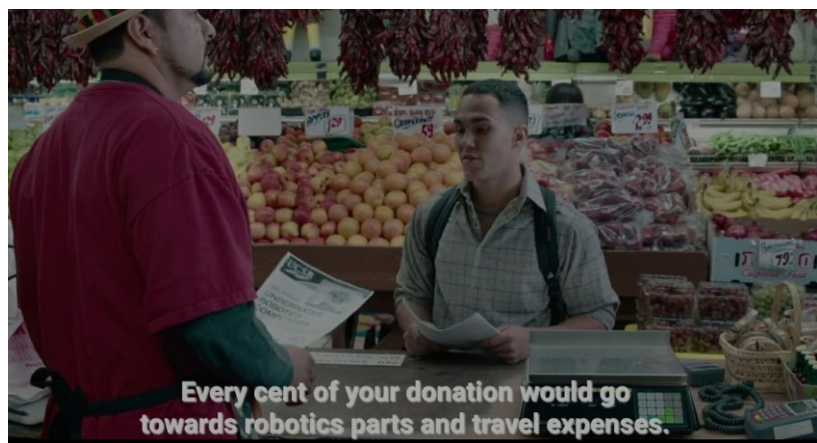




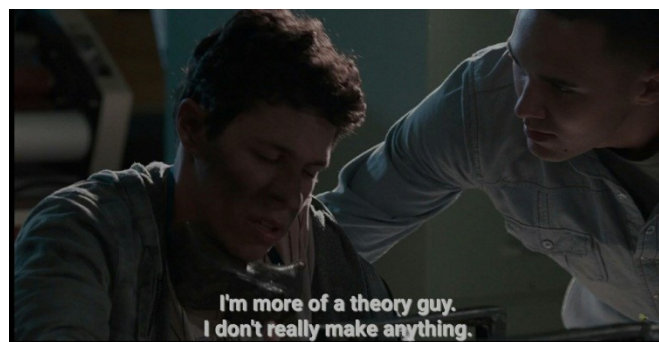
In this scene (42:26 – 42:35) the team give help Luis to understanding the function of the materials. This scene shows a positive interdependence because when students work together on a project and the success of one contributes to the success of all, a positive climate is created. Positive interdependence fosters helping, encouraging, and tutoring, it can be looked in a dialogue when Cristian and Lorenzo help Luis to understanding “Cristian: You know, the micro-controllers, the fuse panel, the battery as a kind of command center. Lorenzo: Just call it all a brain. Luis: The brain. I got it.” When students work on project, students feel that they are working together to achieve one goal and are bound to one another. This is in accordance with the teachings of the Qur’an which instructs to help each other in goodness as described in the Qur’an Surah Al-Maidah verse 2.



In this scene minute (43:51), Lorenzo working on soldering, in this scene it was explained by the Lorenzo that his contribution to the team project is another way to ensure students participate.



In another scene minute (28:57), Oscar tries raising some money from asking donations to people, so that the money can purchase the material to build the ROV.



And in another scene minute (17:27) and minute (21:07), Cristian shows that he just smart in the theory and he design the ROV. This, according to the researcher, is individual accountability because making each student put more effort into a project to ensure all students participate.

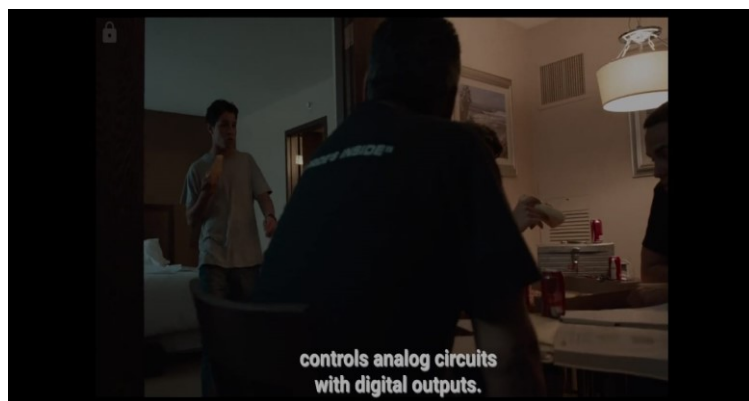


In this scene minute (36:36) all team members are in the shop including Mr. Fredi, they are buying equipment to be treated for the project.



Next scene minute (38:54) all team members carry equipment that has been purchased at the shop.

So in scene minute (36:36) and (38:54) it was explained equal participation because there are some basic ways to ensure that students will participate about equally or equitably. The point here is that slacking is not an option for students as work on project.





In this scene minute (1:34:39 – 1:35:00) a team consisting of Cristian, Lorenzo, Oscar and Luis interact with each other discussing the functional parts of the project that has been done. So that for team projects, interaction is naturally simultaneous among teams.

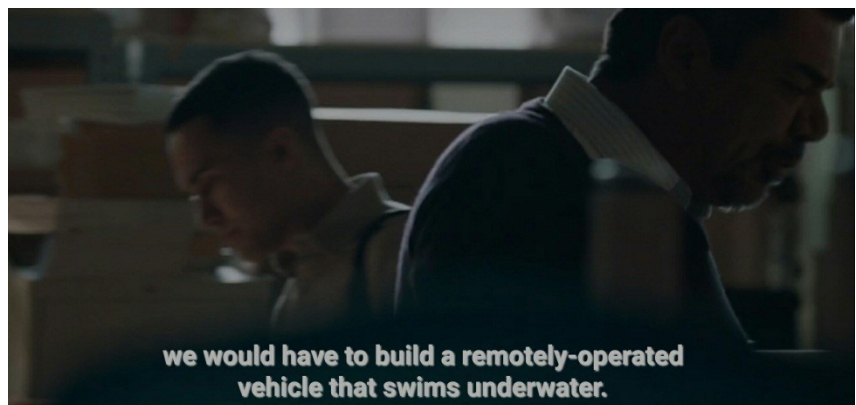
c) Team project

As team project there are several parts team project structure, developed by Laurie Kagan, is a high utility structure ideal for anytime a team works together to create a product. The product can be a team book, team art project, team science project, team experiment, team collage, even a team performance anything

that can be created or performed by a team. The steps of a team project as Laurie Kagan reveal:

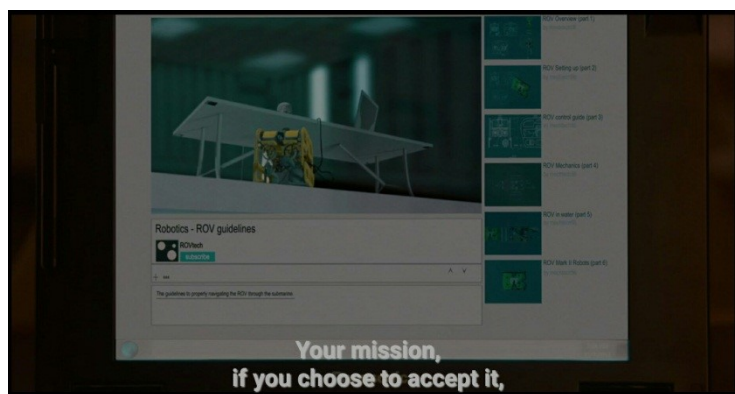
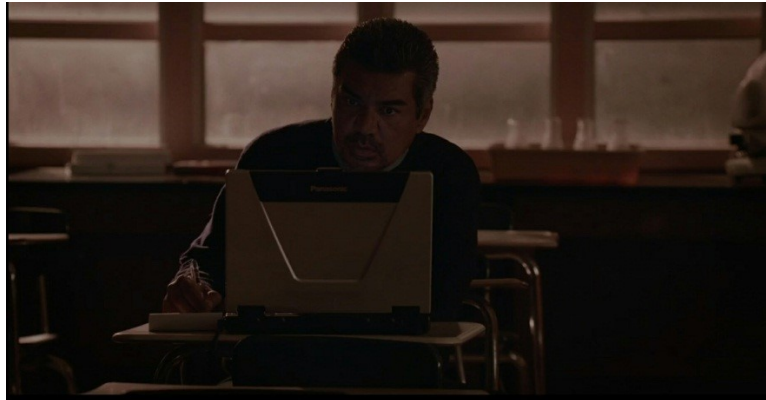
1. The teacher announces the team project
2. The teacher assigns roles and resource access
3. Students work in teams to create the project.²

As the characters perform in several scenes that researcher has taken which representative of the team project.



This scene minute (13:43) is shown Mr. Fredi announces the project what the team should do. It can be looked in a dialogue Mr. Fredi “we would have to build a remotely-operated vehicle that swims underwater.”

² Spencer Kagan and Miguel Kagan, *Kagan Cooperative learning*, (San Clemente: Kagan Publishing, 2009), 13.5.

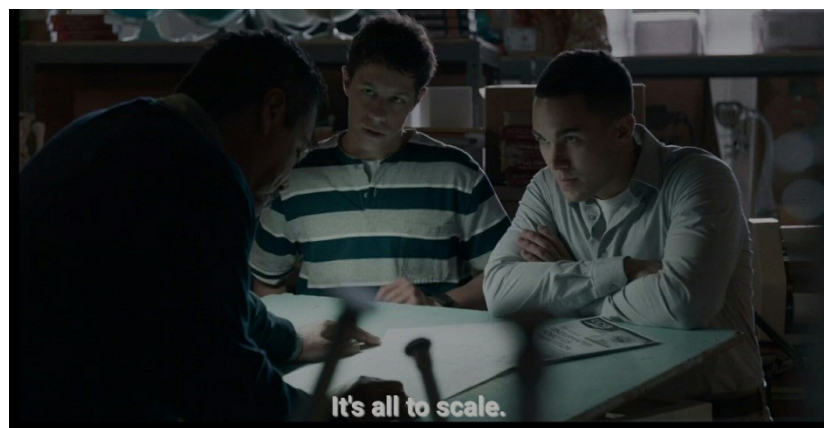


In other scene minute (18:13), Mr. Fredi reviewing the project that will be done later on his laptop it means Mr. Fredi as teacher prepare about the project.

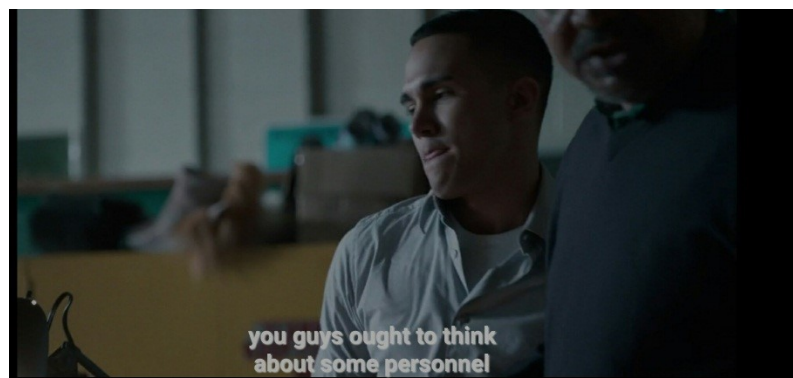


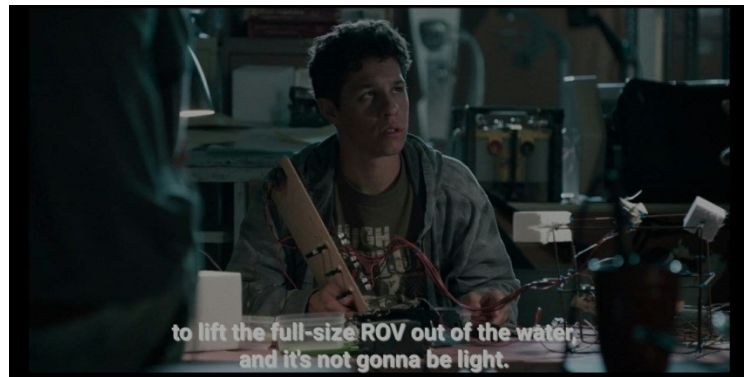
In this scene minute (23:52), Mr. Fredi assign role of Lorenzo as their mechanic in team. It can be looked in a dialogue

Mr. Fredi introduce Lorenzo as mechanic “This is our new mechanic, Lorenzo”. Because Mr. Fredi already knows their ability and capability that Lorenzo have. And as a teacher Mr. Fredi doesn’t let the gift that Lorenzo have is wasted so he can put the Lorenzo in a team as their mechanic.

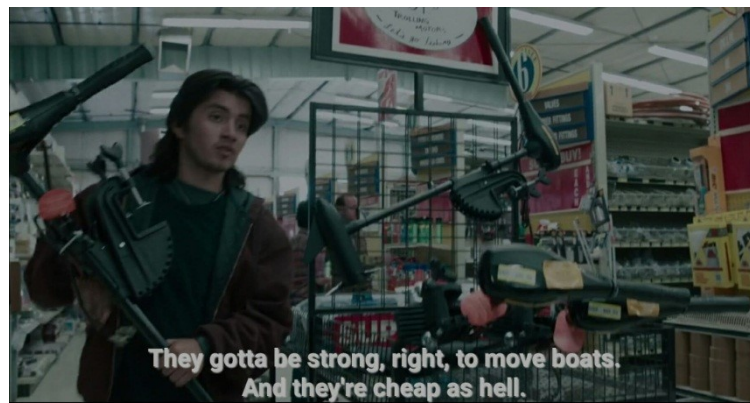


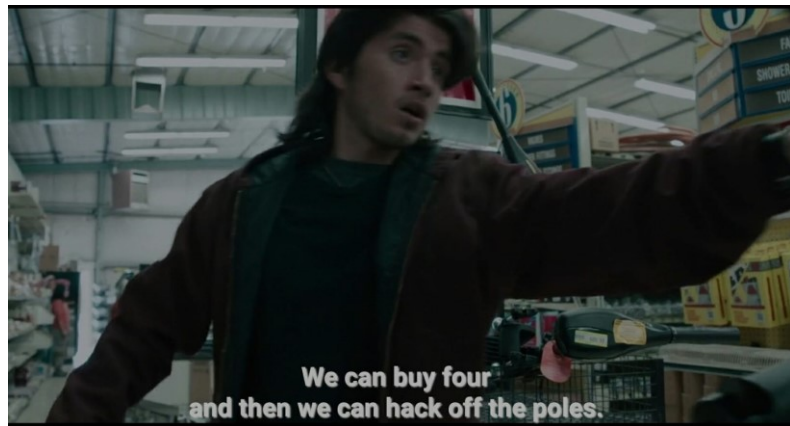
In other scene minute (17:18) Cristian and Oscar went to Mr. Fredi to explain about design of the project that Cristian made. It means before Oscar went to Mr. Fredi to explain about his design, Mr. Fredi has assigned Cristian to design it.





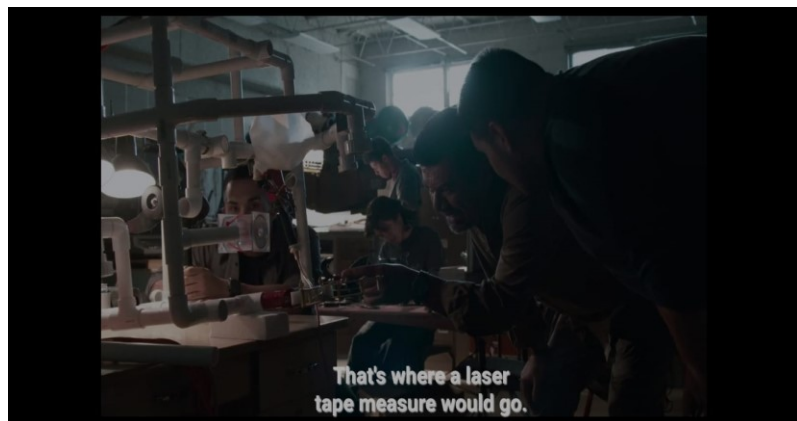
In this scene minute (25:33 – 25:35), Mr. Fredi thinks that the team needs another personnel because it will not be easy to lift the full-size ROV out of the water. It can be looked in a dialogue Mr. Fredi to the team “You guys ought to think about some personnel to lift the full-size ROV out of the water, and it’s not gonna be light”. It means Mr. Fredi as teacher to complete the project Mr. Fredi assigns roles for every student in team. Each student will have his own unique project specific role. Roles can be switched and rotated based on task completion or time.





In this scene minute (37:12 – 37:30) Lorenzo decides what equipment to buy and explain why he decides to pick that equipment to team. It can be looked in a dialogue Lorenzo to the team “They gotta be strong, right, to move boats. And they’re cheap as hell. We can buy four and then we can hack off the poles”. It means Mr. Fredi trust to Lorenzo to picking and deciding that resource access that would be use because Mr. Fredi has assign Lorenzo as their mechanic. This way, every student is included in the team project.



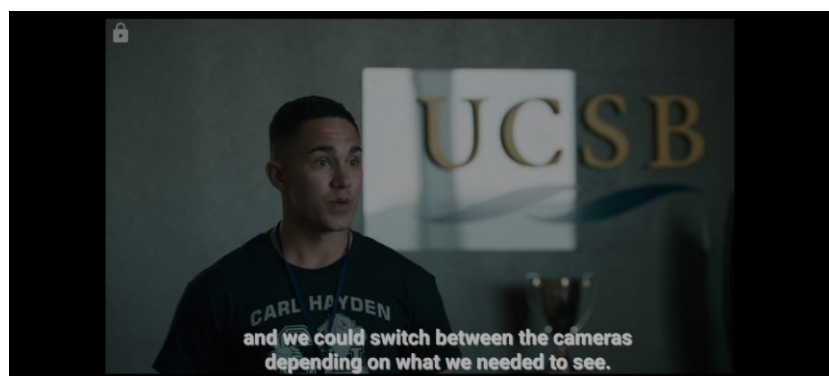
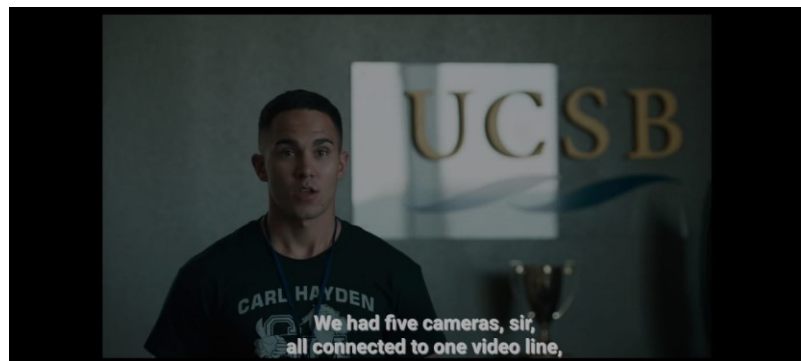


In this scene minute (42:36 – 44:06), Oscar, Lorenzo, Cristian, and Luis start to work. With all explanation from researcher above they adopt cooperative project and project principles as they work in a team project to create a product. Students could all work together in harmony without any structure, each contributing their own fair share.

d) Sharing project plans

As the researcher explanation above in review of related literature in chapter I. There are three structures for teams to share their ideas before they launch into their projects there is team post, team whip, and team stand-n-share. As the character performs in

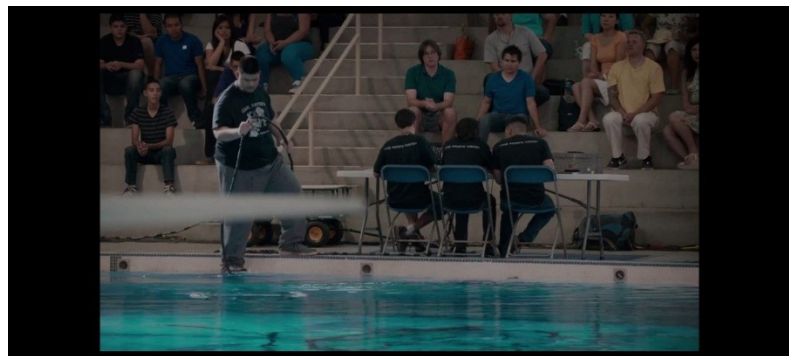
several scenes that researcher has taken which representative as team whip.



In this scene minutes (1:37:04 – 1:37:08) Oscar sharing project plans. This scene shows a team whip there is teams prepare a short statement of project plans. One person from each team stands and shares the plans. It can be looked in a dialogue Oscar “We had five cameras, sir, all connected to one video line, and we could switch between the cameras depending on what we needed to see.”

e) Sharing project and presentations

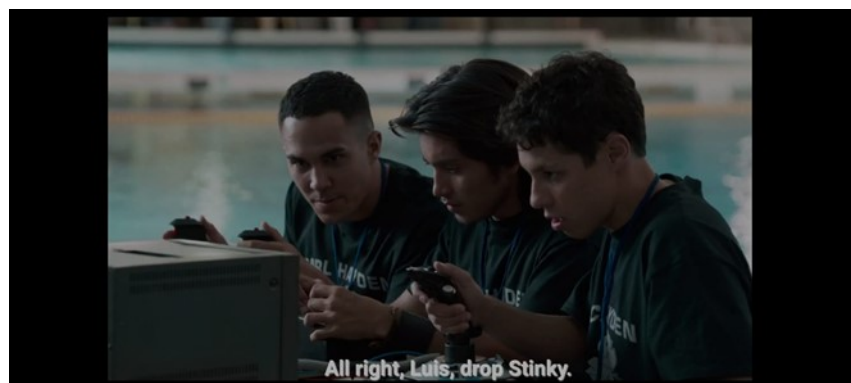
Team presentation, each team makes a time presentation. An important component of a team presentation is that each teammate plays a role in the presentation, and that the roles students play are equal or equitable.³ As the characters perform in several scenes that researcher has taken that which representative team presentation.



³ Spencer Kagan and Miguel Kagan, *Kagan Cooperative Learning*. (San Clemente: Kagan Publishing, 2009), 13.9.



In this scene minutes (1:25:40 – 1:31:29) Oscar, Lorenzo, Cristian, and Luis presenting their work has been done and present that ROV can work to do task that has been provided. It means they doing team presentations, they present their project into audience and make sure that product of the project it can be work.



It sees in scene minute (1:25:40) when they are going to present their work, it can be looked in a dialogue when Oscar orders Luis “All right, Luis, drop stinky”. It means they named the ROV stinky and the ROV is the project that which will be presented. And it can be seen that they also have their respective roles. Oscar, Lorenzo, and Cristian have a role to operating and monitoring the ROV while the ROV underwater and Luis managed the cable length and lifted from underwater ROV.

This, according to the researcher is included in the team presentations because an important component of a team presentation is that each teammate plays a role in the presentation, and that the roles students play are equal or equitable. Each student has responsible to their roles, their ability that has provided before by teacher try best for their presentations as they present their work project.

B. What kinds of project principles are found in the “Spare Parts (2015)” movie?

As the researcher explain above in review of related literature in project principles point. And the researcher finds that project principles include in cooperative projects and presentations, to be creating of successful cooperative projects the principles for students apply there is Positive interdependence, individual accountability, equal participation, and

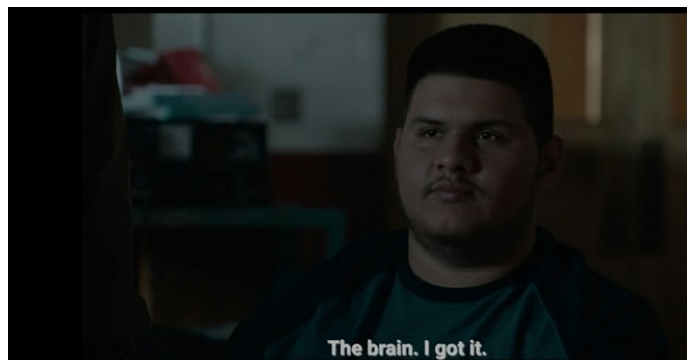
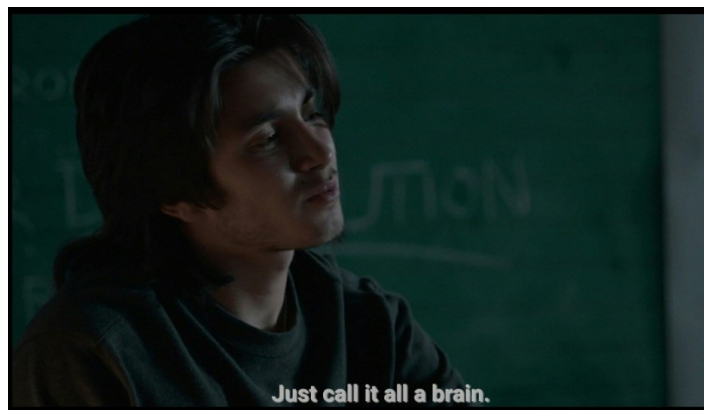
simultaneous interaction.⁴ As the characters perform in several scenes that researcher has taken which representative project principles applied.

a) Positive interdependence

Positive interdependence is the most well-established principle in the study of cooperation. When students involved in their place with positive interdependence they are usually active in their team work. As the students ability to ensure their progress work is running well. As students work on projects they are already have to knowledge before they are in work team is naturally from the desire of the students.

They need each other member to create positive interdependence hopes their let the teammate in the empty spaces. Because when their struggle together they already with in it. Sometimes the students let their teammate in their struggle. But with positive interdependence principles they apply they are might go to in mutual combination. As they need each other help, tutoring, and doesn't let the team in their struggle.

⁴ Spencer Kagan and Miguel Kagan, *Kagan Cooperative Learning*, (San Clemente: Kagan Publishing, 2009), 13.3



In this scene (42:26 – 42:35) the team give help Luis to understanding the function of the materials. According to the researcher, this scene shows a positive interdependence because the team fosters helping, encouraging, and tutoring Luis so that he understands that function of the materials. Indeed, in this scene in

the context, of the team give help Luis is they cooperate, help each other, and encourage each other.

b) Individual accountability

Being part of the team feel accountable in every work progress is another way to ensure all students participate. The students put more effort into a project if they know they are being held individually accountable for their contributions. As they construct their ability before they already partake in team work. And take the responsibility that the teacher give some roles in their team. And they can share the new knowledge with teammate when they doesn't have that ability to being accountable as they equally work in individual and make each students in a team doesn't want to be burden. So they being accountable in their contributions in team progress.



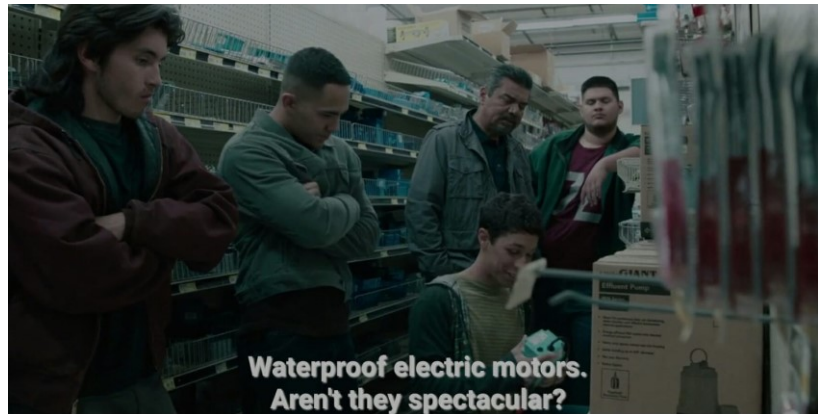
In this scene minute (43:51), Lorenzo working on soldering, in this scene it was explained by the Lorenzo that his contribution to the team project is another way to ensure students

participate. According to the researcher, this scene shows an individual accountability because Lorenzo put more effort into a project if he knows he is being held individually accountable for his contributions. In the process of working out the project accountability is strengthened if students know they will have to display their knowledge or share their personal contribution publicly, they will make a concerted effort. Their performance has them being accountable in team make sure they would achieve a common goal. Team work is the process by which learning is enhanced, but team projects it doesn't make for individual achievement. Each student is accountable for this project and take the responsibility to get achieve a common goal together as work in cooperative project.

c) Equal participation

As students have difference ability and capability they already know they would not be in a team as a burden, they already know when they are doesn't have ability they are tend to equally to be participate in work progress as a team. Equal participation makes students really important in every aspect as long as they are to be participating and equally in a team project. Not every single when they are participated in work progress during task they are not wasted their participated because they are construct their new

knowledge that had not already have before. As participation is a part of the learning process. Students that they wouldn't take their present in their teams they are not learning and doesn't understand what kind of projects that will be create in their team.



In this scene minute (36:36) all team members are in the shop including Mr. Fredi, they are buying equipment to be treated for the project. As a team the members must ready to get equitably ensure that participation in team.



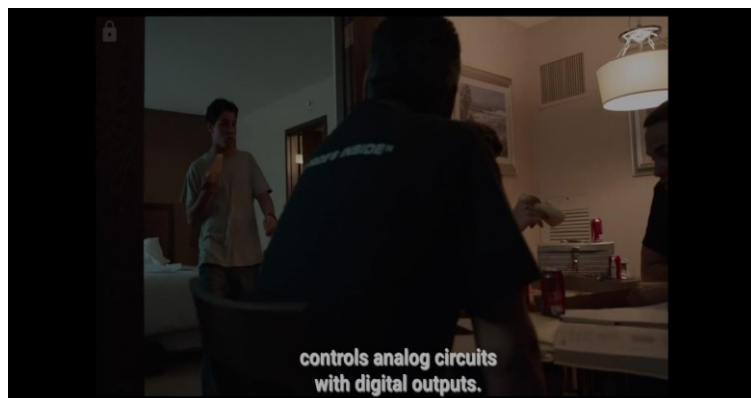
Next scene minute (38:54) all team members carry equipment that has been purchased at the shop. According to the researcher, this scene shows an equal participation because all team

members participate in the project process. There are some basic ways to ensure that students will participate about equally or equitably. Students have different abilities so that to make sure they are participating in their progress students should equally when their team needs some help from each member. Every progress they would make a team decision the members of team must be participating to team progress. Individual accountability is not guaranteed to make their work project done. Because every member of team has some ability that which can help anytime, so the team member must be ready when the team needs their help they should participate to going well team project.

Students structure their participation and equally being on team, they have respect for each other because they already know their abilities and doesn't let the team to further struggle and students put the effort to being participated equally on team as they work their projects. For being participating in a team, students understand about what ability their teammate has. And take the blame for being slacking around when their team working out of run to make their project team done. So the point of being equally in participation as their work in team project is they are ensured of being participating in progress work and equally in work progress as a team.

d) Simultaneous interaction

They help each other; they want to achieve their same goal together as they interact simultaneously. Students in their team work as a team that should be simultaneously interact with each teammate as they work in team project but also in one another side there should be a student doesn't have ability to make first move in interaction. There is should be a triggered in common ways to created simultaneous interaction to part in team. That be a simple common ways to make students doing project and interact simultaneously that is a goal. When the goal that be set in the first, there should be a more the students interact simultaneously because they won't their effort has been wasted because the one teammate being a burden. So the simultaneously interaction it should be there in a team work progress as they do the same goal. They help each other caring over until they understand the important goal is it.



In this scene minute (1:34:39 – 1:35:00) a team consisting of Cristian, Lorenzo, Oscar and Luis interact with each other discussing the functional parts of the project that has been done. Cristian said “Controls analog circuits with digital outputs”. As they are in one team they are already help each other and interact each other grows their empathy as their struggle together in one team they are solve together too as a team. That is a simultaneous interaction.

Simultaneous interaction is the most powerful tool to have increasing the students’ active engagement. Having more time for learning is a good thing, spending more time on task during learning time is a better thing, but interacting over the learning content is the best thing. As the character perform in this scenes simultaneously representative in that scenes whereas they interact each other increases engagement and decreases off-task time during cooperative projects. As students in a team projects, interaction is naturally simultaneous among teams.



And Oscar said “Luis, are you sure that you get this, because we can go over it again.”



And Luis said “Yeah, PWM, I’m good”.



And Lorenzo said “All right, so let’s talk about weight, mass and density”. In this case according to the researcher is a form of simultaneous interaction because for team projects, interaction is naturally simultaneous among team members and promote active engagement increases students learning as students work on projects. Simultaneous interaction ensure students empathy in social aspect, because when their teammate struggle their simultaneously interact each other and take the responsibility about their struggle as they work in team project. Make sure they understand well in every aspect about their problem in team work

progress. Sometimes students doesn't have empathy when their teammate are being struggle in their work progress as long as they already done with their work and let their teammate when they are not interact because they have a problem to social communicate. As long as their project done it's not a big deal to be not being interact with each other. So simultaneous interaction is important to be part in team project don't let the teammate being struggle.

Learning is a social activity directly students gather their connection with other students. To be successful as educators they must put effort to make their students have social interaction because social interaction is key to learn and grow together. Students tend grows the respect and responsibly to each other. As student get the problem of their understanding they can ask to teammate to find the problem solve together. Students take pieces and put them together in their own unique way, building something different and new insight from their teammate. The student's previous knowledge, experiences, beliefs, and insights are all important foundations for their continued learning.

The more team talks with other teammate, the more they will be engaged and the better they will learn. Just like those scenes as the character in the spare parts movie representative simultaneous interaction in team project. They know that they are not achieving the same goal just because they are in project but

they don't let their teammate have a struggle in understanding that they don't understand what the meaning doing project. So they help each other just because want to their project can be finished, but they also want to help teammate to learn new things that they may not understand.

Making an effort to put their teammate understand is not a big deal as long as they want to listen and want understand what the meaning of the project can be done. They know they will be stuck when the teammate don't understand what about their subject in their project so the team can let the teammate anytime but simultaneous interaction making students more have a social empathy for their teammate. They don't let the teammate they want to raise their team members as a common goal that is achieves their own learning to get the new knowledge.

This is that how important simultaneously interaction for student on their creating successful cooperative projects as the epitome of constructivist education.