A Study of Problem-Solution Discourse: Examining TED Talks through the Lens of Move Analysis

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Abstract

Move analysis is a research tool helping language learners and teachers to study discourse used in authentic contexts and to produce them in communication. The author examined a corpus of 50 TED talks to identify move structures including stages, problem-solution moves and the features of these moves using genre analysis and Hoey's framework for the problem-solution genre. The findings reveal three stages of oral presentation: the opening, body and closing stages; each stage consists of various supporting move features. In the substantive stage of the talk, the body stage, four moves are employed to convey messages: the problem move (44.27%), the response move (35.92%), the evaluation move (11.65%), and the situation move (8.16%). Certain move features are used rhetorically in more than one stage; for example, the restated thesis, the restated suggestion and the call for action move features are used in both the body and the closing. The study shows these empirical results with the aim of contributing to materials design and in-class practice for oral presentation courses and other events.

Keywords: move analysis, problem-solution discourse, TED talks, oral presentation, English for academic purposes

Introduction

A study of move structure and move characteristics of discourse in various authentic contexts is regarded as usual tool for language instruction (Hyland, 1990; Hyland, 2007; Flowerdew, 2000). Studies conducted for this purpose include studies on the move structure of argumentative essays (Hyland, 1990), biochemistry research article introductions (Kanoksilapatham, 2012), application essays (Ding, 2007; Henry & Roseberry, 2001), conference proposals (Connor & Halleck, 2006), letters of appeal (Sadeghi & Samuel, 2013), and press releases (Gamper & Wei, 2014). This study was conducted to identify move structures and move characteristics of a world-renowned type of talk, the *TED* talk, which consists of a problem-solution discourse in the body of the presentation. The findings of this study will contribute as a learning tool and help establish practice guidelines for EFL students, teachers and people interested in giving oral presentations which aim to raise problem issues and to give solutions.

Learning how to give oral presentations which aim to present problems and propose solutions, like TED talks, is a process that responds to the notion of learning for the twenty-first century. That is, equipping students with critical thinking skills, problem-solving skills and communication skills will prepare students with skills necessary for success in work, life and society in the twenty-first century (Kay, 2010; Pearlman, 2010). This notion of twenty-first century learning was developed by groups of teachers, educators and business leaders (P21 Partnership for 21st Century Learning [P21], 2017). This study, then, takes into consideration the importance of providing students with the skills necessary for twenty-first century learning. Therefore, the author used English transcripts from fifty TED talks as authentic data of which its

topics are multi-disciplinary with a strong belief in the "power of ideas to change attitudes, lives and, ultimately, the world" (Technology, Education and Design [TED], 2017). The author considers data from TED talks appropriate as a learning model for oral presentations which require students to use critical thinking, problem-solving and communication skills.

Move analysis of problem-solution discourse of different genres has been conducted to explore the move structure of, for example, newspaper articles (Aghagolzadeh & Khanjani, 2011; Ali, 2013) and student writings (Flowerdew, 2003; Galan & Perez, 2003). This research is another such effort. It was undertaken with the purpose of identifying move structures and move characteristics of oral presentations or talks which include problem-solution discourse. The findings will benefit EFL learners and materials developers in the development of oral presentation courses and will build on knowledge in the field of problem-solution discourse and move analysis.

Significance of the study

Most written and spoken problem-solution genres have been studied in depth by linguists. The studies revealing linguistic means of identifying problem-solution patterns have focused on clause relations together with their grammatical and lexical signals. As a consequence, patterns of problem-solution discourse including situation, problem, response, and evaluation have been identified by linguistic elements (Flowerdew, 2008). However, studies of genre have been encouraged to involve human activities and to be products of more social construct rather than only being products of text types (Tardy, 2006). This study on problem-solution discourse examining socially popular TED talks was then conducted to study the experience-sharing and knowledge-producing activity which is shaped by human activity.

Hyland suggests that acquisition of genre knowledge is an essential element individuals need to be familiar with in order to understand texts as "socially situated attempts to communicate" (Hyland, 2014, p. 40). Genre knowledge will provide a discourse community with an understanding of how a certain discourse is structured to successfully communicate its messages and achieve its rhetorical goals. Though it is obvious that genre knowledge of a social context is essential, Swales (1990) emphasized that how a certain genre is organized in a social context has been a problem for non-native learners; there must be an available rhetorical model to help learners or discourse community members equip themselves with genre knowledge and provide them with practice guidelines to produce a discourse of their choice. This study is another attempt offering genre knowledge concerning move structures and move characteristics of a socially constructed talk including problem-solution discourse.

TED talks, a popular public speaking forum invites speakers from all walks of life; these talks have gained considerable interest locally and internationally for ideas worth sharing from the personal and professional experiences of speakers. This study selected TED talks including problem-solution discourse with the aim of finding the move structures that will help prepare learners and practitioners step by step through embedded move features to present and critically discuss issues they deem problematic and reliably propose effective solutions to the problem raised. To achieve this practical goal of giving oral presentations, it is essential for learners and practitioners to use and develop their critical thinking, problem-solving and communication skills. As a result, move structures and move characteristics found as the finding of this study can be used or applied as guidelines for practices and lessons on public and oral presentation focusing on an issue of problem-solution.

Genre analysis

According to Coulthard (1994), we cannot always assume that all texts are comprehensible straight away since knowledge and ideas are not linear; as a result, messages conveying knowledge and ideas need to be effectively organized in order to make a non-linear message fully comprehensible. That is, textual organization plays an important role. In this regard, knowledge of move identification and move structure will effectively guide message senders through the textual organization of a certain genre they need to produce. This will eventually help shape non-linear forms of knowledge, ideas and information into linear forms.

Move realization: a communicative purpose driven analysis

> "A genre is best conceptualized as goal-directed and functional. The communicative intentions in the genre shape the structure of the genre and provide it with an inner structure" (Hyland, 2007).

Move realization is the practical result of a theoretical process obtained as the product of genre analysis using embedded communicative purposes as a means to distinguish and categorize texts into several moves and move features that actually form texts or certain genres. In other words, move structures can be retrieved and reconstructed by using shared communicative purposes, which is central if move analysis is to identify moves and move features embed in texts (Cohen & Upton, 2009; Hyland, 2007). Move and stage realization can be reliably described since there is a linguistic notion that holds that different moves, move features and stages reveal their distinctive functions and semantic purposes (Cohen & Upton, 2009; Flowerdew, 2000). At the end of move analysis, the findings will show a series of moves and purposes that the message senders have developed (Hyland, 2014; Paltridge, 2013). Moves, move features and stage realization will then be representative of a certain genre and can be used to explain the move structures of a genre (Hyland, 1990); for example, problem-suggestion articles, research grant proposals, business letters, and advertisements.

Genre analysis: a context-bound study

Genre analysis is an empirical study of the authentic use of language in a real context (Hyland, 2007). Scholars and those who study genre analysis need to get used to and refer to the context in which a genre is produced (Flowerdew, 2000; Hyland, 2007; Hyland, 2014; Paltridge, 2013). Paltridge (2001) refers to Bhatia (1993)'s method of intuitively surveying texts; Paltridge adds that an initial contextual examination of a text is a must and message senders, whether they are speakers or writers, should make use of the results of the process. Bhatia proposes a list of questions which those who study a certain genre use in order to understand and produce the key contextual characteristics of the genre. Guiding questions to examine a textual context include: what is the purpose of the genre? what is the setting? who are the possible listeners/readers? what knowledge and information do listeners/readers have about the topic and need to know? what are the speaker's/writer's expertise and experiences related to the topic of the discussion? (Hyland, 2007; Paltridge, 2001).

Contextual analysis will eventually answer the big question of how to design the textual content; that is, what kind of information, stories, statistical data, opinions is included; how much and in what proportion should a speaker/writer include of each element in a text to achieve his/her purposes (Hyland, 2007). To clarify the question Hyland (2007) raises, if a speaker/writer

masters the contextual characteristics of a genre, we will see different kinds of content in the forms of different moves, in different amounts, and in different orders that a speaker/writer uses to organize texts. The figure below sums up what has just been discussed, the factors governing the key contextual characteristics and content production in a certain genre.

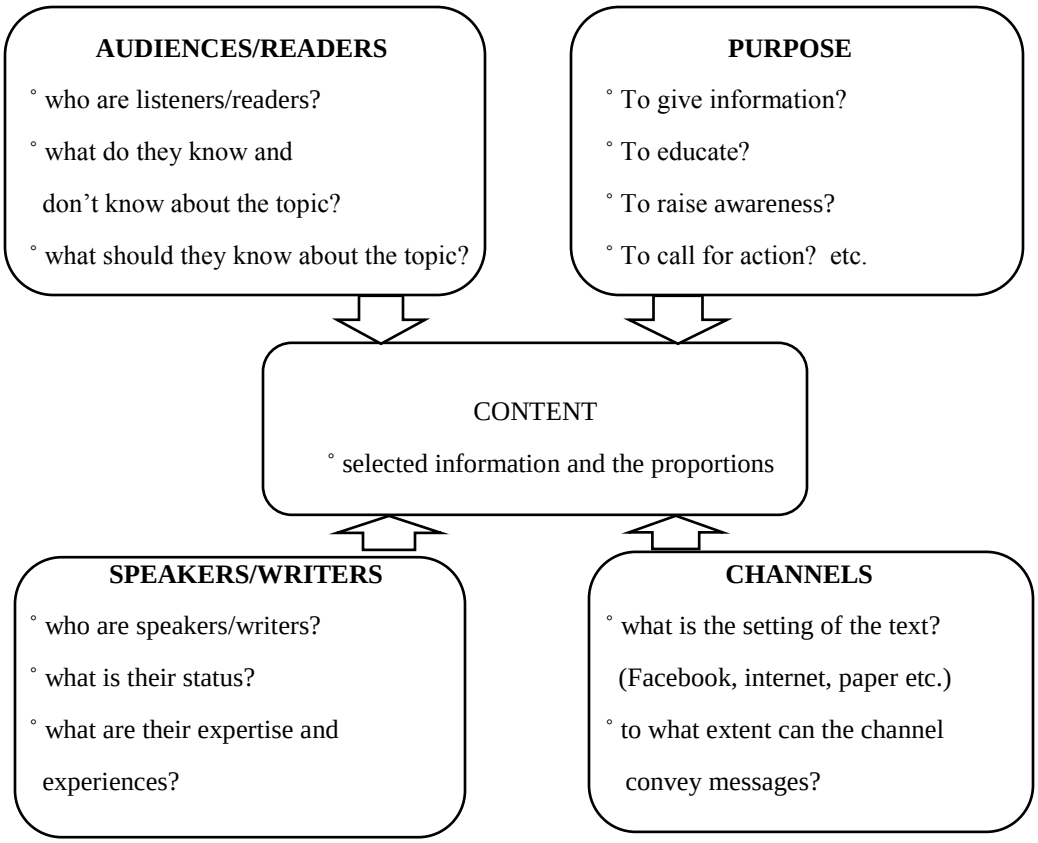

Figure 1. Factors governing key contextual characteristics and content production (Hyland, 2007 ; Paltridge, 2001).

Move structure of problem-solution discourse: SPRE

Michael Hoey proposed a rhetorical structure for problem-solution discourse in 1983. The move structure consists of four moves, the situation, the problem, the response and the evaluation (SPRE). The following shows Hoey's (1983) problem-solution move structure and gives definitions for each move (Hoey, 2001; Salkie, 1997).

1. Situation: the situation move is primarily used to provide background information preparing listeners/readers to be able to understand issues involved in the discourse that follows.

2. Problem: the problem move is used principally to discuss obstacles, needs, restrictions, drawbacks, dilemmas in focus in the discourse.

3. Response: the response move presents solutions to the problem; for example, how to overcome obstacles, how to respond to needs, how to remove restrictions, and how to resolve dilemmas.

4. Evaluation: the evaluation move is used to introduce positive and negative consequences of the speaker's/writer's proposed suggestions as well as to discuss the advantages and disadvantages of each suggestion when there is more than one proposed suggestion.

Studies confirm that the SPRE move structure does not occur in a fixed and predictable order; that is, there is no one-to-one mapping of communicative functions of move structures embedded in a problem-solution text (Ali, 2013; Flowerdew, 2003; Hoey, 2001; Jordan, 1984; Paltridge, 1996). According to Hoey (1986), the lack of a one-to-one mapping for communicative functions does not imply a communication breakdown. Hoey explains that how listeners/readers perceive the order of messages or move order matters (Hoey, 1986); that is, the real nature of the pattern depends on whether messages are fully comprehended by listeners/readers, not a particular pattern applied to a certain genre.

Hoey's organizational pattern for problem-solution discourse (1983), consisting of situation, problem, response, and evaluation (SPRE), can be applied to several kinds of genre or text types. The SPRE move structure has been used in various discourse types from opinion articles discussing problems and proposing solutions to business and in organizational communications including business proposals, letters to solve conflicts, letters of recommendation, advertising brochures, and leaflets. These texts are designed using the same SPRE framework (Jordan, 1984). See the example below:

A letter to solve a conflict (Farkas, 2016)

1. Situation : Your firm and I have joint use of a single parking lot.

2. Problem : Your employees start work before ours and fill all the spaces.

3. Response : Limit your employee's use of the parking lot.

4. Evaluation : Work with us to solve the problem in a cooperative manner. Otherwise we will take legal action.

In this study, the move structure of "SPRE" was used to identify the rhetorical patterns of public oral presentations, *TED* talks which have never been before examined using an analytical "move analysis."

Methodology

Data collection

This study is a corpus-driven analysis of TED talks which include a discussion of problem issues leading to solutions. Fifty transcripts of TED talks given in English, with lengths of 10-20 minutes and with a total of approximately 120,000 words, were purposively sampled from the fifteen most popular talks of all time, ten popular talks and twenty-five other talks. The topics of the fifty talks are multi-disciplinary and cover a wide range of eight issues including success and happiness in life and in work, communication, science, psychology, education, self and identity, and living in society, with six or seven talks for each issue, making up a total of 50 talks. An analysis of these fifty samples suggested certain move features under the opening, the closing and the body including the situation, the problem, the response and the evaluation (SPRE) moves. The fifty speakers were of different nationalities and careers; for example, cybersecurity experts, computer scientists, scientists, writers, educators, a designer, a psychologist, a model, a TV host, and a comedian.

Data analysis

The move analysis of the TED talks was based on the notion of shared communicative purpose which helps determine what a certain genre consists of (Hyland, 1990). The embedded communicative purposes in a discourse or a text are used to divide a text into different moves; that is, a move is realized according to a communicative purpose connected with each move. This is the basic purpose-based or purpose-driven genre analysis method. In this study, the author also used Hoey's (1983) framework of analysis to examine problem-solution discourse. Similarly, the problem-solution texts, or transcripts of the TED talks used in this study, were analyzed and the moves were identified and classified as situation moves, problem moves, response moves, or evaluation moves (SPRE moves) according to their communicative purposes. Since the data consists of transcripts of oral presentations, it was necessary for the author to watch all the TED talks broadcast on YouTube in order to understand what is really going on in the talks; for example, video clips, graphic materials and speakers' gestures and hand signals used during the talks.

Data analysis was conducted in two steps. The first step was to divide the data into the three stages found in oral presentations, the opening, the body and the closing, by using the basic purpose-based genre analysis method. The second step was to classify each stage according to SPRE moves and move features using 1) Hoey's (1983) analytical framework for problem-solution discourse dividing texts into four moves: the situation move, the problem move, the response move and the evaluation move (SPRE) and 2) the basic purpose-based genre analysis method. To illustrate the point, in the second step, the author classified each stage, the opening, the body and the closing stages, by using the two frameworks. The data divided into, first, SPRE moves and, second, move features according to the three stages. All the SPRE moves and the move features were the results of the analysis in the second step. A quantitative analysis, including the total number, the average value, the percentage and ratio, was employed to show move frequency and occurrence.

The author reanalyzed and recoded all the data two months later using the same analytical frameworks. The result of intra-coder reliability was 91.10%. Then twenty percent of the data, or ten talks, was analyzed and inter-coded by a native speaker scholar of EFL who is familiar with areas of English for academic purposes, move analysis and discourse analysis. The inter-coder reliability rate was 81.06%.

Results

Move identification and analysis

The two steps of analysis, a basic purpose-based genre analysis and Hoey's analytical framework for problem-solution discourse, result in three sets of findings. The first set of results involves dividing TED talk transcripts into three stages, the opening, the body and the closing. The second set of results includes the four different moves of the problem-solution genre, which are the situation, the problem, the response and the evaluation (SPRE moves) embedded in the body of the text. The third and last set of results includes, first, move features in all SPRE moves in the body and, second, move features in the opening and the closing stages as well as, third and last, definitions of all move features in TED talks.

Table 1 below shows a list of the three stages of talks, the four moves of problem-solution discourse, all move features, definitions of these features, and sample statements.

Table 1
Moves of problem-solution talks and their definitions

Stage: Move Move feature	Definition
A. Opening stage	
1. Greeting	The speaker greets the audience
Sample statement	A greeting from the talk "Do schools kill creativity?" by Ken Robinson
	Good morning. How are you?
2. Self-introduction	The speaker introduces herself/himself. It can be in an attention-getting manner
Sample statement	A self-introduction from the talk "Battling bad science" by Ben Goldacre Debunker
	I'm a doctor, but I kind of slipped sideways into research, and now I'm an epidemiologist.
3. Attention getter (Hook)	The speaker gets the audience involved in the talk at the opening to capture the audience's attention
Sample statement	An attention getter from the talk "How to make stress your friend" by Kelly McGonigal
	I have a confession to make. But first, I want you to make a little confession to me. In the past year, I want you to just raise your hand if you've experienced relatively little stress. Anyone? How about a moderate amount of stress? Who has experienced a lot of stress? Yeah. Me too.
4. Lead-in	The speaker provides brief information to lead the audience to the body and to the main content of the talk
Sample statement	A lead-in from the talk "How to raise successful kids – without over-parenting" by Julie Lythcott-Haims
	You know, I didn't set out to be a parenting expert. In fact, I'm not very interested in parenting, per se. It's just that there's a certain style of parenting these days that is kind of messing up kids, impeding their chances to develop into themselves. There's a certain style of parenting these days that's getting in the way.
5. Topic of talk	The speaker states the topic or focus of the talk
Sample statement	Topic of the talk from "Eight secrets of success" by Richard St. John
	Here we are, seen years, 500 interviews, and I'm going to tell you what really leads to success and makes TEDsters tick.
6. Purpose of talk	The speaker identifies the purpose or significance of the talk
Sample statement	Purpose of the talk from "How to make stress your friend" by Kelly McGonigal
	For years, I've been telling people, stress makes you sick. It increases the risk of everything from the common cold to cardiovascular disease. Basically, I've turned stress into the enemy. But I have changed my mind about stress, and today, I want to change yours.
7. Thesis of talk	The speaker states clearly what the thesis or the main idea of the talk is
Sample statement	Thesis of the talk from "I'm not your inspiration, thank you very much" by Stella Young

	We've been sold the lie that disability is a Bad Thing, capital B, capital T. It's a bad thing, and to live with a disability makes you exceptional. It's not a bad thing, and it doesn't make you exceptional.
8. Overview of talk	The speaker gives an overview of the talk in order to prepare the audience and to help the audience see the organization of the talk clearly
Sample statement	Overview of the talk from "Battling bad science" by Ben Goldacre Debunker
	What I'm going to show you is all of the main things, all of the main features of my discipline, evidence-based medicine. And I will talk you through all of these and demonstrate how they work, exclusively using examples of people getting stuff wrong.

B1. Body stage: Situation move

1. Background information	The speaker presents stories, including the speaker's stories, facts, information about the situation or conditions or issues in order to link to the problem issues the speaker raises
Sample statement	Background information for the talk "Do schools kill creativity?" by Ken Robinson
	I heard a great story recently – I love telling it – of a little girl who was in a drawing lesson. She was six, and she was at the back, drawing, and the teacher said this girl hardly ever paid attention, and in this drawing lesson, she did. The teacher was fascinated. She went over to her, and she said, "What are you drawing?" And the girl said, "I'm drawing a picture of God." And the teacher said, "But nobody knows what God looks like." And the girl said, "They will, in a minute."

B2. Body stage: Problem move

1. Background of problem	The speaker presents information and background information showing how problems under discussion start and have developed
Sample statement	Background to the problem from the talk "Refugees have the right to be protected" by Antonio Guterres
	The war in Syria has been happening for five years. Millions of refugees are in camps and villages and towns around Syria. You have yourself warned about the situation and about the consequences of a breakdown of Libya, for example, and yet Europe looked totally unprepared. Well, unprepared because divided, and when you are divided, you don't want to recognize the reality. You prefer to postpone decisions, because you do not have the capacity to make them. And the proof is that even when spike occurred, Europe remained divided and was unable to put in place a mechanism to manage the situation.
2. Problem issues	The speaker describes details about the problem or conditions resulting in negative effects and calls for a solution or a change
Sample statement	Problem issue from the talk "Refugees have the right to be protected" by Antonio Guterres
	The world is abandoning us.

Stage: Move Move feature	Definition
3. Getting audiences involved in the problem	The speaker presents information related to the problem to convince the audience that the issue presented is a problem or it affects them
Sample statement	Getting the audience involved in the problem from the talk "Where is cybercrime really coming from?" by Caleb Barlow *So how are we going to stop this? It's not like we're going to be able to identify who's responsible – remember, they operate with …. I would propose that we need a completely new approach. And that approach needs to be centered on the idea that we need to change the economics for the bad guys. And to give you a perspective on how this can work, let's think of the response we see to a healthcare pandemic: SARS, Ebola, bird flu, Zika. What is the top priority?*
4. Cause of problem	The speaker examines the causes leading to certain problem conditions
Sample statement	Cause of the problem from the talk "Refugees have the right to be protected" by Antonio Guterres *And then the trigger was when all of a sudden, international aid decreased. The World Food Program was forced, for lack of resources, to cut by 30 percent food support to the Syrian refugees. They're not allowed to work, so they are totally dependent on international support.*
5. Result of problem	The speaker discusses negative results of the problem
Sample statement	Result of the problem from the talk "How to raise successful kids—without over-parenting" by Julie Lythcott-Haims *And here's what it feels like to be a kid in this checklisted childhood. First of all, there's no time for free play. There's no room in the afternoons because everything has to be enriching, we think.*
6. Thesis of talk	The speaker states clearly what the thesis or the main idea of the talk is
Sample statement	Thesis of the talk from "Three lessons on success from an Arab businesswoman" by Leila Hoteit *I would like to think that we (Arab women) poor, oppressed women actually have some useful, certainly hard-earned lessons to share, lessons that might turn out useful for anyone wishing to thrive in the modern world. Here are three of mine.*
7. Ending the problem	The speaker shows signs of ending discussion of the problem by signposting s/he is going to suggest solutions
Sample statement	Ending the problem from the talk "The power of vulnerability" by Brene Brown *And you know how I feel about vulnerability. I hate vulnerability. And so I thought, this is my chance to beat it back with my measuring stick. I'm going in, I'm going to figure this stuff out, I'm going to spend a year, I'm going to totally deconstruct shame, I'm going to understand how vulnerability works, and I'm going to outsmart it. So I was ready, and I was really excited.*

Stage: Move Move feature	Definition
B3. Body stage: Response move	
1. Preparing audiences for suggestion	The speaker tries to get the audience involved in suggestions by providing information as a transition or a bridge to suggestions s/he is going to give
Sample statement	Preparing audience for a suggestion from "How to speak so that people want to listen" by Julian Treasure *You have an amazing toolbox. This instrument is incredible, and yet this is a toolbox that very few people have ever opened. I'd like to have a little rummage in there with you now and just pull a few tools out that you might like to take away and play with, which will increase the power of your speaking.*
2. Beginning of solution	The speaker tells a story about how s/he started to solve the problem
Sample statement	Beginning of the solution from the talk "How to learn from mistake?" by Diana Laufenberg *We'd never done this before, and they didn't know exactly how to do it. They can talk – they're very smooth, and they can write very, very well, but asking them to communicate ideas in a different way was a little uncomfortable for them. But I gave them the room to just do the thing.*
3. Solution	The speaker suggests solutions to the problem under discussion or shares solutions or stories about what s/he did or learned or found from his/her experiences
Sample statement	Solution from the talk "How to learn from mistake?" by Diana Laufenberg *"Go figure it out. Let's see what we can do." And the student that persistently turns out the best visual product did not disappoint. This was done in like two or three days. And this is the work of the student that consistently did it.*
4. Suggestion	The speaker suggests possible ways to solve the problem under discussion but s/he has not yet used the suggestions to solve problems
Sample statement	Suggestion from the talk "Why we do what we do" by Tony Robbins *It wasn't your ability; it was your state. Your model of the world is what shapes you long term. Your model of the world is the filter. That's what's shaping us. It makes people make decisions. To influence somebody, we need to know what already influences them. It's made up of three parts. First, what's your target?" What are you after?"*
5. Proving thesis	The speaker tries to convince the audience to believe in the thesis of talk by presenting related issues
Sample statement	Thesis and Proving thesis from the talk "Hackers: the Internet's immune system" by Keren Elazari Thesis of the talk*:* *We are often terrified and fascinated by the power hackers now have. They scare us. But the choices they make have dramatic outcomes that influence us all. So I am here today because I think we need hackers, and in fact, they just might be the immune system for the information age. Sometimes they make us sick, but they also find those hidden threats in our world, and they make us fix it.* Proving the thesis of the talk*:* *Making vulnerabilities known to the public is a practice called full disclosure in the hacker community, and it is controversial, but it does make me think of how hackers have an evolving effect on technologies we use every day. This is what Khalil did. Khalil is a Palestinian hacker from the West Bank, and he found a serious privacy flaw on Facebook which he attempted to report through the company's bug bounty program. These are usually great arrangements for companies to reward hackers disclosing vulnerabilities they find in their code.*

Stage: Move Move feature	Definition
6. Call for action	The speaker persuades the audience to see that further action must be undertaken to solve the problems
Sample statement	Call for action from the talk "Where is cybercrime really coming from?" by Caleb Barlow *We need to effectively democratize threat intelligence data. We need to get all of these organizations to open up and share what is in their private arsenal of information. The bad guys are moving fast; we've got to move faster. And the best way to do that is to open up and share data on what's happening.*
7. Restated suggestion	The speaker restates and emphasizes major suggestions proposed
Sample statement	Suggestion and a Restated suggestion from the talk "How we can face the future without fear, together" by Rabbi Lord Jonathan Sacks Suggestion: *One day I saw across the courtyard a girl who was everything that I wasn't. She radiated sunshine. She emanated joy. I found out her name was Elaine. We met. We talked. We married. And 47 years, three children and eight grandchildren later. I can safely say it was the best decision I ever took in my life because it's the people not like us that make us grow. And that is why I think we have to do just that.* Restated suggestion: *I think we need to do that in order to realize that we can disagree strongly and yet still stay friends. It's in those face-to-face encounters that we discover that the people not like us are just people, like us. And actually, every time we hold out the hand of friendship to somebody not like us, whose class or creed or color are different from ours, we heal one of the fractures of our wounded world. That is the us of relationship.*
8. Restated thesis	The speaker restates the thesis of talk as a final thought or a reminder
Sample statement	Thesis and Restated thesis from the talk "I'm not your inspiration, thank you very much" by Stella Young Thesis of the talk: *We've been sold the lie that disability is a Bad Thing, capital B, capital T. It's a bad thing, and to live with a disability makes you exceptional. It's not a bad thing, and it doesn't make you exceptional.* Restated thesis: *I really want to live in a world where disability is not the exception, but the norm.*

Stage: Move Move feature	Definition
B4. Body stage: Evaluation move	
1. Evaluating positive consequences of solution (solution+)	The speaker evaluates solutions s/he or other people used to solve the problems in focus and describes how they yielded positive consequences
Sample statement	Solution and Evaluating the positive consequences of the solution from the talk "I love being a police officer, but we need reform" by Melvin Russell Solution: *We came up with some incredible initiatives, engagements for our community and police to build that trust back. We began to deal with our youth and with those who we consider are on the wrong side of the fence. We knew we had an economic problem, so we began to create jobs. We knew there was sickness in our community and they didn't have access to proper medical care, so we'd partner up. We partnered up with anybody, never thinking about the crime. Because at the end of the day, if we took care of the needs of the people, if we got to the root cause, the crime would take care of itself.* Evaluating the positive consequences of the solution: *After three years of a four-and-a-half-year stint, we looked back and we looked over and found out that we were at a 40-year historical low: our crime numbers, our homicides – everything had dropped down, back to the 1970s. And it might go back further*.
2. Evaluating negative consequences of solution (solution-)	The speaker evaluates solutions s/he or other people used to solve the problems in focus and describes how they did not yield positive consequences
Sample statement	Solution and Evaluating the negative consequences of the solution from the talk "Why science demands a leap into the unknown" by Uri Alon Solution: *Saying "Yes, and" bypasses the critic and unlocks hidden voices of creativity you didn't even know that you had, and they often carry the answer about the cloud.* Evaluating the negative consequences of the solution: *I started being invited to give talks to thousands of scientists across the world, but the knowledge about the cloud and saying "Yes, and" just stayed within my own lab, because you see, in science, we don't talk about the process, anything subjective or emotional. We talk about the results. So there was no way to talk about it in conferences.*
3. Evaluating positive consequences of suggestion (suggestion+)	The speaker evaluates his/her or others' suggestions to the problems in focus and describes how they might yield positive consequences
Sample statement	Suggestion and Evaluating the positive consequences of a suggestion from the talk "How to raise successful kids – without over-parenting" by Julie Lythcott-Haims Suggestion: *You don't have to go to one of the biggest brand name schools to be happy and successful in life.* Evaluating the positive consequences of a suggestion: *Happy and successful people went to state school, went to a small college no one has heard of, went to community college, went to a college over here and flunked out. The evidence is in this room, is in our communities, that this is the truth.*

Stage: Move Move feature	Definition
4. Evaluating negative consequences of suggestion (suggestion-)	The speaker evaluates his/her or others' suggestions to the problems in focus and describes how they might not yield positive consequences
Sample statement	Suggestion and Evaluating the negative consequences of a suggestion from the talk "Your social media 'likes' expose more than you think" by Jennifer Golbeck Suggestion: *One of the paths we can go down is the policy and law path.* Evaluating the negative consequences of a suggestion: *We could go the policy route, where social media companies say, you know what? You own your data. You have total control over how it's used. The problem is it's sometimes said of Facebook that the users aren't the customer, they're the product. And so how do you get a company to cede control of their main asset back to the users? It's possible, but I don't think it's something that we're going to see change quickly.*
C. Closing stage	
1. Conclusion	The speaker summarizes the main points of the problems and suggestions discussed in the talk
Sample statement	Conclusion from the talk "Don't ask where I'm from, ask where I'm a local" by Taiye Selasi *So, the next time that I'm introduced, I'd love to hear the truth:"Taiye Selasi is a human being, like everybody here. She isn't a citizen of the world, but a citizen of worlds. She is a local of New York, Rome and Accra."*
2. Restated suggestion	The speaker restates and emphasizes major suggestions proposed
Sample statement	Suggestion and Restated suggestion from the talk "How the worst moments in our lives make us who we are" by Andrew Solomon Suggestion: *Forge meaning and build identity. That became my mantra. Forging meaning is about changing yourself. Building identity is about changing the world. All of us with stigmatized identities face this question daily: How much to accommodate society by constraining ourselves, and how much to break the limits of what constitutes a valid life? Forging meaning and building identity does not make what was wrong right. It only makes what was wrong precious.* Restated suggestion: *Forge meaning. Build identity. Forge meaning. Build identity. And then invite the world to share your joy.*
3. Restated thesis	The speaker restates the thesis of talk as a final thought or a reminder
Sample statement	Thesis and a Restated thesis from the talk "I'm not your inspiration, thank you very much" by Stella Young Thesis of the talk: *We've been sold the lie that disability is a Bad Thing, capital B, capital T. It's a bad thing, and to live with a disability makes you exceptional. It's not a bad thing, and it doesn't make you exceptional.* Restated thesis of the talk: *Disability doesn't make you exceptional, but questioning what you think you know about it does.*

Stage: Move Move feature	Definition
4. Final thought	The speaker leaves a final thought to the audience as an important point to consider before s/he ends the talk
Sample statement	Final thought from the talk "Everyday cybercrime – and what you can do about it" by James Lyne *The Internet is a fantastic resource for business, for political expression, for art and for learning. Help me and the security community make life much, much more difficult for cybercriminals.*
5. Call for action	The speaker persuades the audience to see that further action must be undertaken to solve the problems
Sample statement	Call for action from the talk "How I teach kids to love science" by Cesar Harada *So citizen scientists, makers, dreamers – we must prepare the next generation that cares about the environment and people, and that can actually do something about it.*
6. Evaluating positive consequences of suggestion (suggestion+)	The speaker evaluates his/her or others' suggestions to the problems in focus and describes how they might yield positive consequences
Sample statement	Suggestion and Evaluating the positive consequences of a suggestion from the talk "How to make work-life balance work" by Nigel Marsh Suggestion: *We should stop looking outside. It's up to us as individuals to take control and responsibility for the type of lives that we want to lead. It's particularly important that you never put the quality of your life in the hands of a commercial corporation. We have to be responsible for setting and enforcing the boundaries that we want in our life. We need to approach balance in a balanced way.* Evaluating the positive consequences of a suggestion: *With the smallest investment in the right places, you can radically transform the quality of your relationships and the quality of your life. Moreover, I think, it can transform society. Because if enough people do it, we can change society's definition of success away from the moronically simplistic notion that the person with the most money when he dies wins, to a more thoughtful and balanced definition of what a life well lived looks like. And that, I think, is an idea worth spreading.*
7. Thank audiences	The speaker thanks the audience at the end of the talk. It also signals the end of the talk.
Sample statement	Thanking the audience from the talk "Refugees have the right to be protected" by Antonio Guterres *Thank you for coming to TED.* and from the talk 'Why we do what we do' by Tony Robbins *God bless you, thank you. I hope this was of service.*

Results in Table 1 show that the corpus studied, TED talks, is divided into three stages, the opening, the body, and the closing. Only content or data in the body corresponds with Hoey's SPRE (situation, problem, response and evaluation) move definitions. Move features occur in all stages and moves. There are a total of thirty-five move features found in all stages and moves. The opening stage and the response move in the body exhibit the highest number of move features, eight move features each. Apart from that, while most move features were used in fixed stages and moves, five move features were found to be used in different stages. First, the "*Thesis*

of talk" move feature was used in both the opening stage and the problem move of the body stage. Also, the "*Evaluating positive consequences of suggestion*" move feature was used in both the evaluation move of the body stage and the closing stage. Three other move features the "*Restated thesis*," the "*Restated suggestion,*" and the "*Call for action*" were found to be used in both the response move of the body stage and the closing stage. The results show the nature of move features that speakers' communicative intent can be reconstructed and expressed through move and move features since moves and move features are purpose-driven and context-bound. As a result, certain move features can be used to express their purpose according to the context of the communication.

Move frequency and proportions

The qualitative analysis in this study reveals three stages, four moves and thirty-five move features, and the definitions together with the nature of the move in the corpus studied, TED talks, as shown in Table 1. The quantitative analysis offers numbers, averages, percentages, and ratios for move occurrence as shown in Tables 2, 3 and 4. Table 2 gives the big picture for move features used in the opening, the body, and the closing in terms of numbers, averages, percentages, and ratios for move occurrence. Similarly, Table 3 shows the same values differently and separately as move features were used in SPRE moves embedded in the body.

The comparative results in Table 2 reveal that the body, which is the main focus of the problem-solution talks, clearly exhibits the highest number of move features, while the numbers of move feature used in the opening and closing are very close in terms of number, average, and percentage. The obvious difference can be seen by the ratio 3 : 12.5 : 2.7 for the opening : the body : the closing, respectively. The average number of move feature used in one talk is 15.

Table 2
Frequency and proportion of move occurrence in the problem-solution corpus of fifty TED talks

Values/Stages	Opening	Body	Closing	Total
Number[a]	124	515	111	750
Average[b]	2.48	10.30	2.22	15
Percentage	16.53	68.67	14.80	100
Ratio[c]	3	12.50	2.70	

[a] Total number of move features in each stage
[b] Average number of move features in each stage per talk
[c] The ratio of move features compared for the three stages of the talks

Table 3 also shows a comparison of move features used in the situation, the problem, the response and the evaluation (SPRE moves) embedded in the body. The results show that the problem move exhibits the highest number of move features, 228, and it is closely followed by the response move, 185 or 44.27% and 35.92% of all move features employed respectively. This result obviously confirms that the main focus of TED problem-solution talks lies in raising the problem and proposing a response (solution/suggestion), while the evaluation move and the situation move, in contrast, play a far less major role in the corpus of problem-solution text. The

obvious similarities and differences can be seen by the ratio 2 : 11 : 9 : 3 for the situation move : the problem move: the response move : the evaluation move, respectively.

Table 3
Frequency and proportion of move occurrence in the problem-solution corpus of fifty TED talks

	The Body Stage				
Values/Stages	Situation	Problem	Response	Evaluation	Total
Number[a]	42	228	185	60	515
Average[b]	0.84	4.56	3.70	1.20	10.30
Percentage	8.16	44.27	35.92	11.65	100
Ratio[c]	2	11	9	3	

[a] Total number of move features in each move
[b] Average number of move features in each move per talk
[c] The ratio of move features for the four problem-solution moves

Table 4 shows in detail the frequencies and proportions of all move occurrences. The total numbers show the number of move occurrences in all the corpus of fifty talks. The percentages show how much each move feature was used in comparison to other move features within the same stage, or SPRE moves. Similarly, the averages reveal how much each move feature was used within the same stage or SPRE moves in one talk. Therefore, in Table 4, the percentage and average values show more and less frequently used move features compared within each stage and SPRE, not across all stages and moves.

The author separately categorized and defined speakers' responses to solve problems under two different move features, a solution and a suggestion, as grouped under the response move. The separated and different identification was done in order to show how speakers rhetorically proposed ways to solve problems. See Table 1 for the different definitions of the terms "solution" and "suggestion."

The values for the frequency of move occurrence in Table 4 suggest that the *Problem* and the *Suggestion* move features occurred more than once in each talk since their average uses were 2.00 and 1.16 respectively. Moreover, the results reconfirm that the problem move (frequency: 228) and the response move (frequency: 185) are the focus of the problem-solution corpus studied. When considering the average values, other move features that might potentially occur in every talk were the *Lead-in* (0.80) in the opening; the *Background Information* (0.84) in the situation move of the body; the *Cause of Problem* (0.88) in the problem move of the body; the *Solution* (0.78) in the response move of the body; and the *Thank Audience* (0.88) in the closing. Among all the three stages and four SPRE moves, only the evaluation move of the body has a relatively low average value; that is the *Solution+* (0.60) in each talk. Interestingly, there are some move features that have very low average values of move occurrence per talk and the result is in contrast to a common shared understanding of oral presentation components. In the opening, of all fifty talks, results show the *Greeting* (0.06), the *Self-Introduction* (0.14), the *Purpose* (0.20), the *Overview of Talk* (0.02), and the *Topic of Talk* (0.24). In the closing, the *Conclusion* (0.10) also shows a relatively low frequency of occurrence. The average values discussed show the tendency of use of move features with both high and low occurrence.

Table 4

Frequency and proportion of move occurrence in the problem-solution corpus of fifty TED talks

OPENING STAGE				BODY STAGE												CLOSING STAGE			
MOVES				SITUATION				PROBLEM				RESPONSE				EVALUATION							
	Ttl[a]	%[b]	Ave.[c]		Ttl[a]	%[b]	Ave.[c]		Ttl[a]	%[b]	Ave.[c]		Ttl[a]	%[b]	Ave.[c]		Ttl[a]	%[b]	Ave.[c]		Ttl[a]	%[b]	Ave.[c]
FEATURES				**FEATURES**				**FEATURES**				**FEATURES**				**FEATURES**				**FEATURES**			
Lead-in	40	32.26	0.80	Background	42	100	0.84	Problem	100	43.86	2.00	Suggestion	58	31.35	1.16	Solution +	30	50.00	0.60	Thank audience	44	39.64	0.88
Thesis	30	24.19	0.60	information				Cause	44	19.30	0.88	Solution	39	21.08	0.78	Suggestion +	16	26.67	0.32	Final thought	19	17.12	0.38
Hook	21	16.94	0.42					Background	30	13.16	0.60	Preparing audience	30	16.22	0.60	Solution -	7	11.67	0.14	Restated thesis	17	15.32	0.34
Topic	12	9.68	0.24					Result	20	8.77	0.40	Proving thesis	18	9.73	0.36	Suggestion -	7	11.67	0.14	Restated suggestion	13	11.71	0.26
Purpose	10	8.06	0.20					Thesis	15	6.58	0.30	Call for action	16	8.65	0.32					Call for action	9	8.11	0.18
Self-intro	7	5.65	0.14					Involving audience	14	6.14	0.28	Beginning solution	11	5.95	0.22					Conclusion	5	4.50	0.10
Greeting	3	2.42	0.06					Ending problem	5	2.19	0.10	Restated suggestion	7	3.78	0.14					Suggestion +	4	3.60	0.08
Overview	1	0.81	0.02									Restated thesis	6	3.24	0.12								
Total	**124**	**100**	**2.48**		**42**	**100**	**0.84**		**228**	**100**	**4.56**		**185**	**100**	**3.70**		**60**	**100**	**1.20**		**111**	**100**	**2.22**

[a] Total number of move features in the corpus of fifty TED talks

[b] Percentage of move features used in each stage and each move

[c] Average number of move feature used per talk

Discussion

All three stages of a talk and the four problem-solution moves or SPRE moves are all supported by different move features; that is, the three stages and the SPRE moves were communicatively achieved with the support of move features. Each move feature was produced according to the speakers' different communicative purposes in different contexts. Table 4 shows the richness of types of move feature employed in all stages and almost all SPRE moves in the body. To illustrate the point, a higher number of move features served as the driving mechanisms in the response move and the problem move in the body as well as in the opening and the closing. However, a comparatively small number of move features was present in the evaluation move and the situation move. The small number of move features was limited to the prime functions of evaluation and situation. The higher number of move feature realized should not be interpreted as indicating superior importance. The explanation lies in the fact that speakers have various ways of communicating their opinions, ideas and information; in other words, talks can be successfully communicated through different types of move features due to the purposes of communication in the different stages of a talk. Not only do the purposes of communication influence the choice, but the context of the talk also governs how texts are produced (Flowerdew, 2000; Hyland, 2007; Hyland, 2014; Paltridge, 2013). These findings explain the move structure and move characteristics of talks that include problem-solution discourse.

Another significant move characteristic concerns move frequency (Tables 3 and 4) which explains the move characteristics of talks. An analysis of move frequency reveals the attention different speakers paid to different sections and shows the number of move feature the speakers can use to communicate successfully. Overall, when comparing the three stages of talk, the body, containing speakers' main points, made up the largest part of the talks. The frequency of move features embedded in the body was four times that of the opening and the closing which speakers paid equal attention to. The ratio was 3: 12.5: 2.7 for the opening: the body: the closing, respectively (see Table 2). Focusing only on the body, the data makes clear that the problem move and the response move were supported by a high number of move features. The ratio was 11:9, while that of situation : evaluation was 2:3 (see Table 3). When considering move frequency or the number of move features employed, it is reasonable to claim that speakers producing problem-solution discourse focus most on how they will present problems and responses.

The results in Table 4 also reveal move characteristics for all thirty-five move features. The move features which occurred in all talks were the *Problem* (average value 2.00) in the problem move and the *Suggestion* (average value 1.16) in the response move. The average values also show that the other move features that were used in almost all talks included the *Cause of the problem* (0.88) in the body move; the *Background information* (0.84) in the situation move; the *Lead-in* (0.80) in the opening stage; the *Solution* (0.78) in the response move; and *Thanking audience* (0.88) in the closing. These high average values reveal where the speakers placed the greatest focus in their talk. These features were found in all or almost all the talks. However, it should not, by all means, be concluded that the other move features, those which have a lower average number of occurrences per talk, are not important. The lower average value for move features only shows that they do not occur in all or almost all talks, but they also contribute to the formation of problem-solution discourse of talks.

One of the most interesting findings is that five move features were found to be used in more than one stage or they were recycled. The possible explanation lies, again, in the speakers' purpose in presenting certain messages at certain stages in the context of the talk (Flowerdew,

2000; Hyland, 2007; Hyland, 2014; Paltridge, 2013). To clarify the point, first, *the Thesis of the talk* was identified not only in the opening stage, but also in the problem move. This implies that some speakers could first state the main idea of the talk either in the opening stage of the talk or in the problem move of the body. In like manner, the *Evaluating positive consequences of suggestion* could be found either in the evaluation move of the body, or in the closing. Third, interestingly, it was found that some speakers restated the main idea of the talk or the *Thesis of talk* either in the response move in the body or in the closing. The author defines this as a *Restated thesis*. Similarly, the *Suggestion* move feature in the response move of the body could be recycled in the closing and it was identified as a *Restated suggestion*. Finally, the *Call for action* move feature was found to be used in either the response move of the body or in the closing. This move characteristic clearly emphasizes that it is possible that certain move features could be recycled or used repeatedly in different moves and stages, not in fixed locations, due to the speakers' purposes of communication in certain contexts.

Pedagogical implications

The move structure and the variation identified by communicative purposes are a basic mechanism allowing teachers to prepare lessons showing learners and practitioners how to organize texts of certain types (Flowerdew, 2000). This notion conforms with Swales' (1990) opinion that it is the communicative purposes that form the "schematic structure", determine the content and style of texts learners need to produce. The move structure together with its variations is raw data teachers can refer to in order to develop an expert model so that learners can acquire new genres and produce texts of different types.

Bhatia (1993) and Flowerdew (1993) emphasizes that teachers need to sensitize learners with examples of target products they need to produce. Flowerdew himself developed an activity in which engineering students write a final year project report including problem-solution move patterns. However, when we refer to a model of move structure, it should not be regarded as a fixed or rigid pattern that learners have to "emulate blindly"; instead, variations in move structure as well as slight adaptations should be counted as normal alternatives (Swales 1990; Kay & Dudley-Evans 1998; Flowerdew, 2000). Not only do decisions on what to include in a text allow for individual variations; that is, moves and move features, but order within move structures also allows for some variations (Flowerdew, 2000).

Evidential and theoretical support exists for pedagogical implications enabling instructors to train learners and practitioners to give a talking using a problem-solution discourse, as mentioned above. It is possible to offer guidelines for teachers to produce learning materials and to organize oral practice activities with socially simulating authentic talks like TED talks in terms of move structures and move characteristics. From now on it will be reasonable for teachers, learners and practitioners to question whether a learning material providing a one-size-fits-all move structure for oral presentations is an effective preparation for the production of different genres and whether learners should always follow the conventions.

Genre-based pedagogy significantly has proven to be a contributory learning and teaching tool (Cheng, 2011; Johns, 2002; Martin & Rose, 2007). However, providing a complete set of different moves and move features for learners to prepare their talks might not always be a good practice. If learners are to acquire new genres and their move structures, their awareness can be stimulated by having learners themselves analyze texts and identify moves and move features as a part of their learning process preparing them for authentic move structures (Cheng, 2008). That is, teachers should have learners and practitioners conduct a move analysis first, see

for themselves what moves and move features are embedded in the sample texts, and then prepare their talks accordingly.

Limitations of the study

Although this study has revealed a variation in move features for problem-solution discourse which can be considered a contribution, it cannot be said definitely that the move structures and the variations can be applied to all kinds of discourse including the situation move, the problem move, the response move, and the evaluation move (SPRE moves); they can serve as guidelines for public speaking discourse including the problem-solution pattern.

One major but quite common limitation of this study is the researcher in this study did not examine contexts of talk influencing each speaker. Since a public speaking forum like TED talks is a socially situated event where speakers have clear objectives, prepared content, and listeners, it is advisable that researchers should understand the context of the talk so as to understand how the genre under examination is developed. Swales and Rogers (1995) conducted a contextual analysis in their study of corporate mission statements by interviewing writers of the mission statements, senior management and committee members as well as by examining related documents to gain insight into how the genre was developed and what the expected roles of the corporate mission are (Paltridge, 2013). Swales and Rogers consider this stage of the experiment the "added value." This added value is also supported by Berkenkotter and Huckin (1995) and Grabe and Kaplan (1996). They emphasize that by doing a contextual analysis, researchers will gain insight into genre knowledge for they will understand the purposes, points of view, and assumptions of speakers and writers who both "acquire and use genre knowledge."

Conclusion

This study has the objective of identifying move structures and move characteristics in problem-solution talks. Hoey's framework of problem-solution move structure were effectively applied to identify the situation move, the problem move, the response move and the evaluation move, all SPRE moves, in the corpus studied. The data analysis resulted in three stages for the problem-solution talk and also revealed that the *Problem* move and the *Response* move are the central focus of the talk. All stages include supporting move features; however, some results for move features in the opening stage of the talk contradict our common knowledge on oral presentation components. This non-conforming result emphasizes the need for empirical study on certain discourse types or genres.

The author hopes the results can be used in learning and in setting practice guidelines for EFL students, teachers and people interested in preparing oral presentations with the aim of raising problem issues and giving solutions.

About the Author

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