# EFFECTS OF MULTICULTURAL TEAMWORK ON INDIVIDUAL PROCRASTINATION

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| Ruti Gafni* | The Academic College of Tel Aviv Yaffo, Tel Aviv, Israel | rutigafn@mta.ac.il |
| Anat Goldstein | The Academic College of Tel Aviv Yaffo, Tel Aviv, Israel | anatgo@mta.ac.il |

* Corresponding author

## ABSTRACT

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| Aim/Purpose | The purpose of this study is to discover usage differences in task performance by students of different cultures, by examining procrastination patterns from a national cultural perspective and exploring the effect of multicultural virtual teamwork on students' individual procrastination. |
| Background | This study aims to examine higher-education entrepreneurial learning in the context of multicultural virtual teamwork, as performed during participation on a Global Entrepreneurship course. |
| Methodology | The methodology consists of quantitative comparative data analytics preceding and subsequent to intercultural team activities. This research is based on analyses of objective data collected by Moodle, the LMS used in the In2It project, in its built-in log system from the Global Entrepreneurship course website, which offers students diverse entities of information and tasks. In the examined course, there were 177 participants, from three different countries: United Kingdom, France and Israel. The students were grouped into 40 multicultural virtual (not face-to-face) teams, each one comprised of participants from at least two countries. The primary methodology of this study is analytics of the extracted data, which was transferred into Excel for cleaning purposes and then to SPSS for analysis. |
| Contribution | This study aims to discover the effects of multicultural teamwork on individual procrastination while comparing the differences between cultures, as there are only a few studies exploring this relation. The uniqueness of this study is using and analyzing actual data of student procrastination from logs, whereas other studies of procrastination in multicultural student teams have measured perceived procrastination, collected using surveys. |

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| Findings | The results show statistical differences between countries in procrastination of individual assignments before team working: students from UK were the most procrastinators and Israeli students were the least procrastinators, but almost all students procrastinated. However, the outcome of the teamwork was submitted almost without procrastination. Moreover, procrastination in individual assignments performed after finishing the multicultural teamwork dramatically decreased to 10% of the students' prior individual procrastination. |
| Recommendations for Practitioners | The results from this study, namely, the decline of the procrastination after the multicultural virtual teamwork, can be used by global firms with employees all over the world, working in virtual multicultural teams. Such firms do not need to avoid multicultural teams, working virtually, as they can benefit from this kind of collaboration. |
| Recommendations for Researchers | These results can be also beneficial for academic researchers from different cultures and countries, working together in virtual multicultural teams. |
| Impact on Society | Understanding the positive effect of virtual multicultural teamwork, in mitigating the negative tendency of students from diverse cultures to procrastinate, as concluded in this study, can provide a useful tool for higher education or businesses to mitigate procrastination in teamwork processes. It can also be used as an experiential learning tool for improving task performance and teamwork process. |
| Future Research | The relation between procrastination and motivation should be further examined in relation to multicultural virtual teams. Further research is needed to explore the effect of multicultural virtual teamwork during the teamwork process, and the reasoning for this effect. |
| Keywords | procrastination, virtual teams, multicultural teams, individual procrastination |

# INTRODUCTION

Today's global business environment usually requires working in international multicultural teams. With the development of online technological tools, those teams often do not meet face-to-face and work virtually, on a daily basis. Courses in the academy try to train and habituate the students to their future environment; thus, they provide virtual-multinational-multicultural courses, in which students in different countries have to work together. Research shows both negative and positive effects of cultural diversity on team performance and on the teamwork process. Multicultural teamwork creates challenges that are inherent to culture, as people coming from different cultural value systems and managerial practices may react in different ways. Those challenges, mainly communication, problem solving and decision-making, leadership, task and relationship conflicts, may hamper team-members' willingness to cooperate (Dzionek-Kozlowska & Rehman, 2017; Goldstein & Gafni, 2019; Lans et al., 2013; Mueller & Thomas, 2001; Stahl et al., 2010).

The main framework used in research to explain the effect of diversity on teamwork has been social categorization, a depersonalized perception that the similarities and differences possessed by group members are used as a basis for categorization. Those distinguish between one's own in-group and one or more out-groups (Chatman & Flyn, 2001; Guillaume et al., 2017; Harush et al., 2018; Stahl et al., 2010; Van Knippenberg et al., 2004). When these categorization processes are along the lines of cultural diversity, they are reflected in team members' various cultural identities, perspectives, and values. Moreover, they may lead to team conflicts, mistrust, fault lines, communication barriers and disagreements on regulations, norms, expectations, and decision- making processes (Cramton &

Hinds, 2014; Dau, 2016; Earley & Mosakowski, 2000; Harush, Lisak & Glikson, 2018; Hinds & Bailey, 2003; Hinds & Mortensen, 2005; Liu et al., 2010; Stahl et al., 2010; Staples & Zhao, 2006).

The national culture of each team member in multicultural teams may generate differences across national and regional boundaries (Mueller & Thomas, 2001). The differences in tendency to procrastinate (Ariely & Wertenbroch, 2002; Cerezo et al., 2017; Gafni & Geri, 2010a), diurnal patterns of work (Gafni et al., 2011; Gafni & Filin, 2015; Tu et al., 2017) and performance of non-mandatory tasks (Gafni & Geri, 2010b), may result in teamwork task-related conflicts (Jehn, 1995). Those conflicts may be mitigated if the team-members perceive their multicultural teamwork as a learning process (Ely & Thomas, 2001).

In the past decade, there has been a noticeable trend toward greater tribalism and ethnocentrism, that corresponds with the global business environment. Globalism, tribalism and ethnocentrism influence one another, but also have an impact on multicultural collaborations and multicultural teamwork (Machida, 2012). This research will not refer to multicultural teamwork in the context of tribalism and ethnocentrism, but will only be limited to the context of culture.

Virtual technology enables communication between the multicultural team members that are geographically dispersed, and allows monitoring their performance (Gefen et al., 2008; Hertel et al., 2005). Yu and Liu (2009) stressed the importance of creating a psychologically safe online learning space for learners that enables support, openness, trust, mutual respect, and risk-taking. Martinho et al. (2014) found that Moodle, which is common in the higher-education environment, is a psychologically safe learning environment. Tracing the students' mode of use of the given LMS (Learning Management System) platform can reveal diurnal time patterns (Gafni et al., 2011; Gafni & Filin, 2015; Spennemann, 2007; Spennemann et al., 2007; Tu et al., 2017) and time management of students from different countries (Foltynek & Motycka, 2009; Vryonides, 2008).

Following prior research, this study aims to examine higher-education entrepreneurial learning in the context of multicultural virtual teamwork, as actually performed during participation on a Global Entrepreneurship course, conducted under the In2It project, an Erasmus+ project funded by the European Union. In2It was a three-year-long project (2016-2018), conducted by a consortium of seven Israeli Colleges and seven Universities from Europe. Its aim was to develop online courses on a virtual platform. The In2It LMS platform was developed on Moodle, as a common psychologically safe environment. This study is based on analysis of objective data collected by the log of Moodle used throughout the course. The online course consisted of a variety of components stored in Moodle's course repository, such as short explaining videos, short pieces of information to read, quizzes, assignments, and questionnaires, some to be performed individually and others in cooperation with the team members. The students go through the components during a specific time, at their own pace, taking into consideration the cooperative activities.

The purpose of this study is to discover usage differences in learning and task performance by students of different cultures, especially by examining procrastination patterns and behaviors from a national cultural perspective, exploring the effect of multicultural virtual teamwork on individual student procrastination. Understanding the differences using technology in order to work in multicultural teams is expected to provide useful guidelines for deciding how these differences can be used or decreased, according to their value, in future training of multicultural teams or working processes.

# THEORETICAL BACKGROUND

## STUDENTS' PROCRASTINATION IN THE CONTEXT OF NATIONAL CULTURE

Procrastination is the deferment of actions or tasks to a later time, or even to infinity. It is defined as unnecessarily postponing or avoiding tasks that must be completed (Schraw et al., 2007). Ferrari et al. (1995) proposed two different forms of procrastination, situational-specific task delays, and chronic dispositional delay behavior patterns. They divided chronic procrastination into two types. The first,

*arousal procrastination*, is the delay that makes a person stimulated when rushing to complete a task. The second, *avoidant procrastination*, is the delay of tasks such that completion would reflect one's abilities. In avoidance procrastination, when not completing a task by a specific deadline, the person may claim that poor performance was influenced by lack of effort or greater rates of time pressure instead of lack of personal ability (Ferrari et al., 1995). Academic procrastination, defined as the tendency to postpone learning activities, is a consequence of post-modern values that are prominent in post-industrialized societies (Dietz et al., 2007). In Western societies, there is an increase in procrastination for two reasons. First, modern technology (social networks, computer games, e-mailing, music-streaming, etc.) can negatively affect the ability to focus and cause procrastination toward tasks. Second, modern values indicate a preference for school, future goals and hard work while post-modern values indicate a preference for social activities and pleasure now. In many cases, there is limited time to pursue different academic and leisure activities, leading to a motivational conflict between the two activities. When students strive for leisure goals and have no structured routines for academic tasks, delaying strenuous learning activities becomes probable. In the modern school learning environment, which advocates autonomous and team learning, delay or failure to complete schoolwork is a common and serious problem among elementary school students (Chiu et al., 2020).

Gafni and Geri (2010a) add that in individual tasks, which are seen and commented on by others, the behavior of the first participants defines norms for the whole class. A wide array of studies link procrastination to personal behavioral factors, such as lack of motivation, deficiencies in self-regulation, external locus of control, perfectionism, disorganization and poor time management (Ackerman & Gross, 2005; Phillips et al., 2007), but only a few studies have explored procrastination using a cross-cultural framework (Zhang & Zhang, 2007; Klassen et al., 2010). Research has shown that procrastination is common in general populations, and is almost universal among university students (Steel, 2007); nevertheless, a student's academic practices, such as study time and procrastination, may be related to culturally different understandings of academic values and behaviors. Cultural background and values may also influence an individual's choices about engaging in or avoiding a challenging task, or may influence the interpretation of procrastinating behaviors (Klassen et al., 2010). Students from collectivist yet achievement-oriented environments may interpret procrastination more negatively than students from individualist environments. This is caused by higher levels of fear of failure and a stronger inclination to avoid family shame and embarrassment (Chong, 2007; Klassen et al., 2010). The perceived cost of procrastination may be greater for students from collectivist contexts because procrastination might be construed as conflicting with personal/academic goals and family expectations (Klassen et al., 2010).

Using Hofstede's (1984) individualist-collectivist dimension while analyzing cross-cultural student groups, Dunn and Wallace (2004) found that Singaporean students spent more time studying, memorized more material, and requested more explicit instructions for assignments and exams than students in a Western cultural context, such as Canada. In another study, Ferrari et al. (2005) found no significant differences in arousal and avoidance procrastination of adults across United Kingdom, United States and Australia, and conclude that chronic procrastination is a common occurrence among adults living in westernized, individualist, English-speaking countries. On the other hand, Olson and Olson (2003) found that in individualist countries, time is spent on accomplishing tasks, and in more collectivist countries, time is spent on building relationships. Saunders et al. (2004) contend that "time visions", which are different perceptions of time across sets of time dimensions, are based on different ethnic and national orientations about time, which affect team-member perceptions of deadlines and team success. Even though individuals' sense of time is psychologically based, it is refined by participation in society and culture.

## MULTICULTURAL VIRTUAL TEAMWORK - EFFECT ON STUDENT'S PROCRASTINATION

Gafni and Geri (2010) examined procrastination in academic environments, and found differences in procrastination tendency to perform individual and collaborative tasks. Their findings suggest that students tend to perform their individual task, obligatory or voluntary, on time, but tend to procrastinate compulsory collaborative tasks, and not complete at all the voluntary ones. However, in this study, and others (Van Eerde, 2003; Özer et al., 2009) the students participating were homogeneous, and not from different cultures.

Marquardt and Horvath (2001) define cultural diversity in student teams as a collaboration of two or more individuals from different cultural or national backgrounds, who have been assigned to interdependent tasks and are jointly responsible for their results. These individuals see themselves, and are seen by others, as a collective unit embedded in an academic environment, managing their relationships within a certain educational environment. Studies on virtual-multicultural teams, which add the virtual aspect (Gibson & Gibbs, 2006; Hertel et al., 2005), focus on four characteristics:

(1) Geographic dispersion, where at least one of the team members works at a different location, or at a different time zone.
(2) Communication is based on electronic technology (e.g. email, fax, phone, video conference, etc.).
(3) Structural dynamism.
(4) National diversity.

Hartmann and Gerteis (2005) define multiculturalism as the creation of social conditions under which diversity can be sustained and new conceptions of solidarity can be created within the reality of increasingly diverse societies. Research on multicultural teams shows both negative and positive effects of cultural diversity on teams in two potentially opposing ways (Mannix & Neale, 2005; Stahl, et al., 2010):

(1) The negative effect relates to social theories, which show that people are attracted to working and cooperating with those they find similar in terms of values, beliefs, and attitudes. Moreover, they tend to categorize themselves into specific groups with others as outsiders, and they treat members of their own group with favoritism, and may judge "others" according to group stereotypes. Therefore, managerial practices and techniques, such as goal setting, incentives, socialization, communication, problem solving and decision-making, may be considered legitimate and acceptable in one culture, and may not be acceptable in another (Erez & Early, 1993; Earley & Gibson, 2002; Shokef & Erez, 2006).

(2) Research finding positive effects suggests that diversity brings different contributions and benefits to teams. A diverse team covers a broader territory of information, taps into a broader range of networks and perspectives, and can have enhanced problem-solving, creativity, innovation, and adaptability (Ely & Thomas, 2001; Bunderson & Sutcliffe, 2002; Bouncken, 2004), both in individual level and team level (Tadmor et al., 2012).

Jehn (1995) defined two kinds of conflicts in multicultural teams: (1) relationship-related conflict; and (2) task-related conflict. Relationship-related conflict might arise due to attitudinal problems, such as dislike, mistrust and lack of cohesion, free riding, and procrastination as a form of free riding that, in excess, can jeopardize a team's ability to meet a deadline (Gans & Landry, 2016). Furthermore, in virtual teams, opportunities for free riders and procrastinators may be enhanced because their (reduced) efforts are more likely to go undetected. Additionally, team members may feel that it is easier to set aside their virtual teamwork when their local demands take precedence (Reeves & Furst, 2004). Task-related conflicts might occur because of a clash of opinions with respect to the tasks,

such as adhering to timelines or different attitudes towards deadlines (Behfar et al., 2006; Harush et al., 2018; Ren & Gray, 2009). Japan, Germany, and the United States are very high on task focus, whereas France, Russia, and the Netherlands are quality-of-life focused. People in collectivist cultures have a stronger preference for avoiding and less for contending than people in individualist cultures (Boros et al., 2010; Leung, 1997). An important factor in overcoming many multicultural teamwork challenges is the existence of a shared meaning system that reflects a common global work culture beyond their distinct socio-culturally national cultures (Earley & Gibson, 2002; Shokef & Erez, 2006).

Using a lens of Positive Organizational Scholarship (POS), Stahl et al. (2010) draw upon recent research on cultural diversity to explore the positive aspects of cross-cultural dynamics in teams and identify some of the processes underlying these effects in rigorous ways. They suggest that individuals' positive trait-like states, such as optimism, hope, efficacy, and resilience, can create synergistic effects in teams, and it is possible that if one person in a team embodies these states the entire team can benefit. High-performing teams can create positive contagious effects throughout an organization, while boosting the states of individual members. In recent research, Goldstein and Gafni (2019) found that multicultural teamwork was a trigger for German and Israeli students and young professionals to participate in a virtual entrepreneurial accelerator, and that in the context of entrepreneurship studies, German and Israeli cultures were found by participants as complementary, stimulating and fruitful. Through the multicultural teamwork experience, participants improved their individual entrepreneurial skills and mindset. Ely and Thomas (2001) argue that diversity perspectives in multicultural teamwork are classifiable into three types: (1) integration and learning, (2) access and legitimacy, and (3) discrimination and fairness. They found that only the integration and learning perspective provided the rationale and guidance needed to achieve sustained benefits from diversity. They conclude that if the team's diversity is seen as a learning resource for the team, it enhances adaptation of change and redefining goals, markets and products. Tadmor et al. (2012) add that multicultural teamwork experience enhances not only the creativity of individual team members but also the joint creativity of the team so that the creative whole is greater than the sum of its parts.

# THE EU ERASMUS IN2IT + PROJECT

The EU Erasmus+ In2It (Internationalization by Innovative Technologies)three-year project developed and implemented an innovative technological infrastructure (In2It LMS platform) and online courses for the purpose of advancing internationalization in higher education, and thereby to expand the practical applications of internationalization. Faculty team-members from seven Israeli academic colleges and seven European universities (Kingston University London and Brunell University in the UK, Université de Montpellier in France, Pädagogische Hochschule Ludwigsburg in Germany, Politechnico di Milano and Università Cattolica del Sacro Cuore in Italy, and Warsaw University of Technology in Poland), collaborated and developed a learning platform based on Moodle, and four collaborative online courses in English. In these courses, the Israeli and European students, worked together in virtual multicultural teams, strengthening their English skills, and exchange of knowledge and experience within an international forum.

This study is based on the Global Entrepreneurship online course, a short-term virtual multicultural Ideation Hackathon (an opportunity-centered entrepreneurial teamwork online course), that was developed on the In2It LMS platform. Figure 1 shows the design structure of this course.
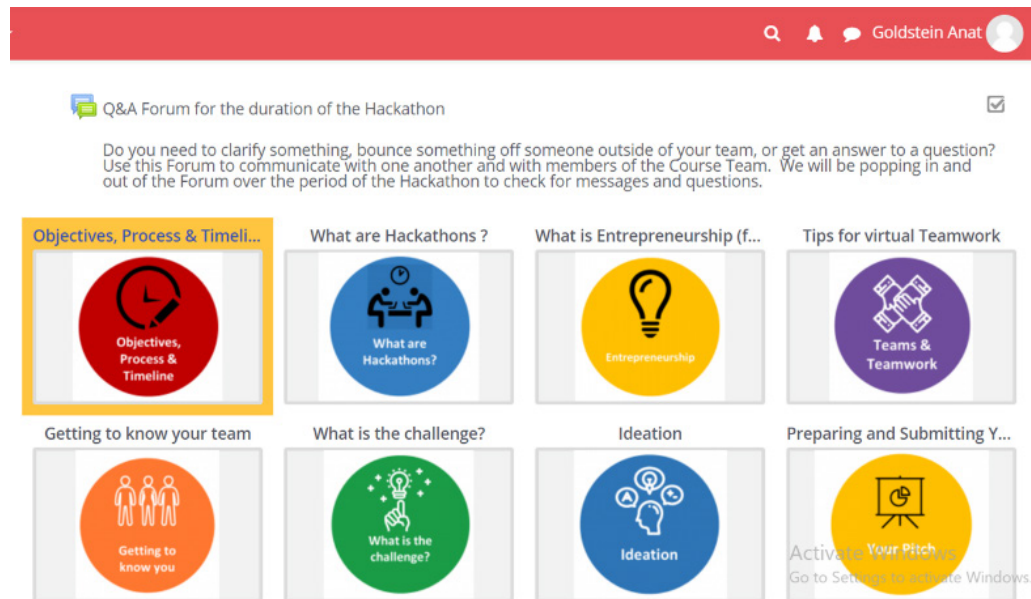
**Figure 1. Global Entrepreneurship Course LMS design on Moodle**

The first Ideation Hackathon was conducted through the In2It platform in 2017. Students from British, French, and Israeli academic institutes were grouped in short-term multicultural virtual teams, aiming to learn entrepreneurial skills and mindset through this experience. The content of the Ideation Hackathon was designed using Rae's (2003) opportunity-centered entrepreneurial learning process, which encompasses four stages: (1) exploring the opportunity; (2) relating the opportunity to personal goals; (3) planning to realize the opportunity; and (4) acting to make the opportunity happen. A narrated presentation of the innovative solutions, using the Business Model Canvas (Osterwalder & Pigneur, 2010), was the collaborative teamwork outcome.

The In2It virtual platform was designed to enable psychologically safe communication. This was based on the following.

(1) Moodle platform was chosen as a base for In2It project development, as it is the common collaborative learning platform that the participating academies used as their course LMS. As a common platform in higher education environment, Moodle was widely researched, and was found to enable building of trust, motivate engagement, and easy to use generally (Erez et al., 2013; Gibson & Gibbs, 2006; Hertel et al., 2005; Kirkman et al., 2013; Schepers et al., 2008; Yu & Liu, 2009).

(2) Team allocation – during grouping, tutors avoided the assignment of team members from the same academic institutes, in order to mitigate sub-groups communication (Earley & Mosakowski, 2000). Moreover, an online team-building task preceded the Ideation Hackathon, to enhance openness between team members (Ren & Argote, 2011).

(3) Online tutor support – announcements through Moodle and a Q&A forum were offered during the Ideation Hackathon. Martinho et al. (2014) researched communication through Moodle as a psychologically safe environment, and found that Moodle is easy use, posting activities regularly makes students interact more in the forums, and it is an advantage to get succinct answers and tutor support.

Management and Information Systems students, undergraduate and graduate, from Kingston University of London, Brunel University of London, Montpellier University of France, and several Colleges from Israel participated in the Global Entrepreneurship online course.

# RESEARCH QUESTIONS

This research aims to discover differences in students' attitudes regarding procrastination when working individually or in international multicultural teams. Two main research questions were investigated.

R1: Are there differences between cultures in students' individual and interdependent task procrastination?

> H1: There will be differences between cultures in procrastination of individual participants. This hypothesis is based on the literature review, where differences between collectivist-individualist, European-Mediterranean cultures, showed differences in attitudes towards procrastination (Klassen et al., 2010; Olson & Olson, 2003; Saunders et al., 2004).

R2: How does the international multicultural teamwork affect the individual procrastination of the students?

> H2: Cultural diversity in teamwork will affect the procrastination of individual participants after teamwork (Mannix & Neale, 2005; Stahl et al., 2010; Tadmor et al., 2012). This study aims to draw on Stahl et al.'s (2010) POS approach, and suggest that individuals' cultural approach towards time and procrastination may affect individuals from other cultures in a positive way.

# METHODOLOGY

This research is based on analysis of objective data collected by Moodle, the LMS used in the In2It project, in its built-in log system, from the Global Entrepreneurship course website, which offers students diverse information and tasks. The data was collected during the course, which took place in 2017. The primary methodology of this study is data analytics, which is a growing trend in research (Levy & Ramim, 2012; Ravid et al., 2007), as well as in business environments (LaValle et al., 2011; Pakkala et al., 2012), due to the gigantic data sets that information systems produce when recording and storing the logs of all the users' activities.

The examined data included the number of visits to each course element, the diurnal time when it was done, the type of activity, etc., according to the data stored in the log. Most of the data contained in the log were in the form of text, which needed to be elaborated, in order to enable data analysis

The students were divided into teams with each team consisting of students from different countries (UK, France, and Israel) and institutions. The online course was a compound of a variety of components stored in Moodle's course repository, such as short explanatory videos, short pieces of information to read, quizzes, assignments, questionnaires, etc., some to be performed individually and others in cooperation with the team members. Each task of the course had a due date, which was taken into consideration for calculating the procrastination. The students had to go through all the components on their own pace, taking into consideration the cooperative activities and the due dates. The tasks of the course, according to its syllabus, are presented in Table 1. For each task, its position in the course schedule, its characteristic (individual, interdependent, or team) and due date are presented.

The students were assigned into teams manually, following a "multicultural" criterion: each team consisted of students from different countries (UK, France, and Israel) and from different institutions. The online course was compound of a variety of components, stored in the Moodle's course repository, such as short explaining videos, short pieces of information to read, quizzes, assignments, questionnaires, etc., some to be performed individually and others in cooperation with the team members. Some teamwork online tools outside the In2it platform (such as Asana. Trello, Whatsapp, etc.) were recommended for communication between students in teams, and the teams decided

which tools to use during their teamwork. There were also guidelines for collaborative teamwork, including brainstorming an idea, and an innovative process for choosing the right idea (as shown in Figure 2).
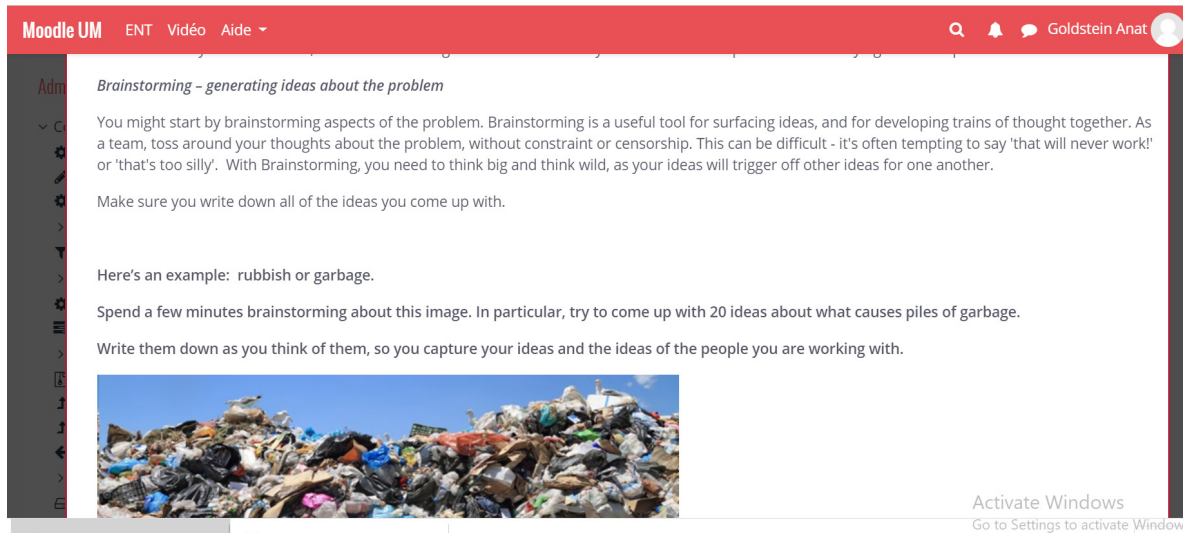


**Figure 2. A screenshot of the Ideation and Brainstorming guidelines on LMS**

Each task of the course had a due date, which was taken into consideration for calculating the procrastination. The students had to go through all the components on their own pace, taking into consideration the due date for each task, either in individual or cooperative activities. The tasks of the course, according to its syllabus are presented in Table 1. For each task, its position in the course schedule, its characteristic (individual, interdependent or team), and due date are presented.

**Table 1. Global Entrepreneurial tasks**

| Task | Position in course timeline | Characteristic | Due date |
|------|------|------|------|
| Pre-course survey | 1 | Individual | 10/11/2017 |
| Quiz 1 | 2 | Individual | 19/11/2017 |
| Quiz 2 | 2 | Individual | 19/11/2017 |
| Quiz 3 | 2 | Individual | 19/11/2017 |
| Individuals ideas submission & individual comments on other's ideas | 2 | Interdependent | 19/11/2017 |
| Team work | 3 | Team (not on platform) | 20-26/11/2017 |
| Pitch Submission | 4 | Team | 26/11/2017 |
| Post-course survey | 5 | Individual | 7/12/2017 |

The tasks were differentiated by their characteristic: "individual", "interdependent" and "team". The "individual" tasks were performed by each of the students separately, without collaboration between students. The "interdependent" tasks were performed by students separately in a designated common

ideation forum, and were viewed and commented on by other students. The "team" tasks were collaborative (on the In2It platform and other communication tools), and were performed by all members of the team.

Most studies on procrastination (e.g., Ackerman & Gross, 2005; Ariely & Wertenbroch, 2002; Lavoie & Pychyl, 2001; Özer et al., 2009; Phillips et al., 2007; Van Eerde, 2003) are based on questionnaires that are filled in by the participants. In this study, the procrastination was calculated from actual performance, as in the research of Gafni and Geri (2010a). In order to calculate the procrastination, which is the dependent variable, the actual date of the performance of the task by the student, as recoded in the LMS In2It log, was compared to the due date. If the dates were equal, the procrastination was defined as 0 (zero). If the task was performed before the due date, the procrastination was defined as a negative number showing the number of days before the due date. If the student procrastinated, the procrastination was defined as a positive number, showing the number of days of procrastination. The pre-course survey questionnaire included demographic data, which was used in order to classify the students and to divide them into teams.

All data received from the LMS log was extracted to an Excel file, and then it was organized and cleaned manually, leaving only relevant data in the file. This was performed by both authors of this study. Records that traced the tutors' activities were deleted. The LMS log keeps each kind of transaction performed by each of the users, like logging-in to the LMS, reading a page, viewing a video, performing a quiz, submitting an assignment, etc. Each transaction logged contains the user's ID, the timestamp when the transaction started, the activity performed and the course element that was operated (the specific video/text/quiz/etc.). The records not needed for this research, have been omitted, leaving only the data about students' transactions regarding the submission of the quizzes, the submission of the individuals' ideas, the pre- and post-course surveys submission, and the pitch submission. The procrastination was calculated by the difference between the due date for each task, and the actual date of submission of the specific task for each student, as recorded in the LMS.

The elaborated data was then transferred to IBM® SPSS® where it was statistically analyzed. The final file included the following columns: User-ID, Country, Gender, Team number, Task (quiz submission, pitch submission, etc.), Performance time (timestamp), Calculated procrastination (difference between due-date of the specific task and its submission date).

## RESULTS

In the examined course, there were 177 participants, from three different countries: United Kingdom, France and Israel. Their ages range from 20 to 40 years old, with an average of 26. Table 2 summarizes demographic data about the students. The students were grouped into 40 multicultural teams, each one composed of participants from at least two countries. Table 3 presents the details according to the different tasks in the course.

**Table 2. Demographics (totals)**

|  | Number of Students | | |
| --- | --- | --- | --- |
| **Country** | **Total** | **Male** | **Female** |
| United Kingdom | 18 | 7 | 11 |
| France | 46 | 21 | 25 |
| Israel | 113 | 59 | 54 |
| Total | **177** | **87** | **90** |

**Table 3. Demographics according to the tasks on the LMS In2It platform**

| Task | Position - course timeline | Charac- teristic | Number of students that performed the task on the platform | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | Total | France | Israel | UK | Male | Female |
| Pre-course survey | 1 | Individual | 177 | 46 | 113 | 18 | 87 | 90 |
| Quiz 1 | 2 | Individual | 120 | 41 | 70 | 9 | 50 | 70 |
| Quiz 2 | 2 | Individual | 119 | 39 | 72 | 8 | 49 | 70 |
| Quiz 3 | 2 | Individual | 123 | 39 | 77 | 7 | 50 | 73 |
| Individuals ideas submis- sion | 2 | Interde- pendent | 91 | 19 | 67 | 5 | 38 | 53 |
| Team work | 3 | Team (not on platform) | - | - | - | - | - | - |
| Pitch Submis- sion | 4 | Team | 40 | - | - | - | - | - |
| Post-course survey | 5 | Individual | 157 | 39 | 106 | 12 | 75 | 82 |

Procrastination of the submission of each task was calculated, as explained in the methodology sec-tion, using the task-defined due-dates as a reference. The pre-course survey was a requirement for starting the course, and only after completion of the pre-course survey, the course material and tasks were opened on the platform. Therefore, the completion of the pre-course survey was not counted in the procrastination calculation.

In order to examine the first research question (R1), regarding the possibility of differences between cultures in students' individual and interdependent tasks procrastination, T-tests were performed, for each kind of task.

Quizzes are individual tasks that were not obligatory, but had a due date. All quizzes had the same due date, so data were examined for all quizzes together. Table 4 shows the procrastination percent-age of individual Quizzes submissions (all three quizzes) compared by country. The table is a result of the frequency percent by country of all quizzes submissions until the due date (negative and zero procrastination) and after (positive procrastination).

**Table 4. Procrastination in Individual non-mandatory tasks (all 3 quizzes) according to Countries**

| % of Submissions | France N=119 | Israel N=219 | UK N=24 |
|---|---|---|---|
| **Up to due date** | 56.3% | 58.0% | 41.7% |
| **Procrastinated** | 43.7% | 42.0% | 58.3% |
| **Total** | 100.0% | 100.0% | 100.0% |

The post of the student idea submission is an interdependent task. Although this task is performed by each student, like the individual tasks, the submission is posted to a forum to which all students have access. Moreover, other students can comment or criticize the idea. Students may be shy to submit before seeing what others have submitted. Table 5 shows the procrastination, by country, in the interdependent task. No statistical differences in any of the countries were encountered when the data were further investigated by gender.

**Table 5. Procrastination in Interdependent non-mandatory tasks (Individuals' idea submission) according to Countries**

| % of Submissions | France N=19 | Israel N=67 | UK N=5 |
|---|---|---|---|
| **Up to due date** | 73.7% | 50.8% | 60% |
| **Procrastinated** | 26.3% | 49.2% | 40% |
| **Total** | 100% | 100% | 100% |

In order to examine the second research question (R2) regarding the change in individual procrastination after performing multicultural teamwork, the procrastination of teams in the team-task (pitch submission) was calculated, as well as the individual procrastination, as evidenced in the post-survey. The only team-task performed and recorded by the In2It LMS platform was the task of submitting the team's pitch. This task was performed by one member of each team, after working together during the Global Entrepreneurship online Ideation Hackathon. The teamwork during this period was not performed using the In2It LMS platform, so there is no recorded data evidence about their intergroup communications and teamwork process. The teams used Skype, WhatsApp, and Facebook to communicate between them and work together. The final outcome of this teamwork was a narrated pitch. The submission of the pitch to the In2It LMS platform was recorded, and the procrastination was calculated for the teams: 35 teams submitted on time, two teams submitted one day before, and three teams submitted after the due date (one day after). Overall, it can be seen that almost no procrastination was found in the team task.

In order to examine if the teamwork process, which resulted in almost no procrastination in the team-task submission, affected the individual procrastination, the procrastination of the students who finished the course, namely performed the quizzes and the last task (post-course survey) was calculated for both tasks, for the same students and compared. Table 6 presents the outcomes, aggregated for all the students in each country. Figure 3 presents the frequencies of change in procrastination per student, where the "before multicultural teamwork" procrastination was calculated for each student according to the average procrastination of the quizzes the student submitted, and the "after multicultural" procrastination was calculated according to the post-course survey procrastination. The difference in procrastination for each student was calculated, taking into account only those who performed at least one quiz and post-course survey (N=131). Results of both Table 6 and Figure 3 clearly show that after teamwork almost all individuals improved their procrastination.

**Table 6. Change in Individual Procrastination after multicultural virtual teamwork**

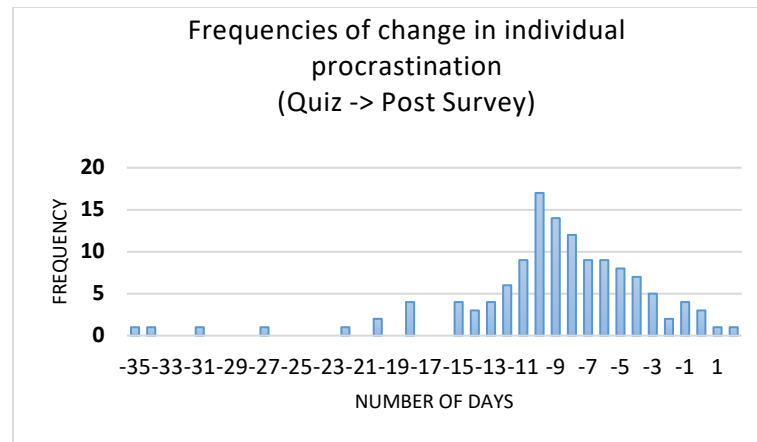| % of sub-missions | Quizzes (before multicultural teamwork) | | | Post-course survey (after multicultural teamwork) | | | Difference in procrastination (before and after) |
|---|---|---|---|---|---|---|---|
| **Country** | **N** | **Until due-date** | **Procrasti-nated** | **N** | **Until due-date** | **Procras-tinated** | |
| France | 119 | 56.3% | **43.7%** | 39 | 95% | **5%** | 38.7% |
| Israel | 219 | 58% | **42%** | 106 | 99% | **1%** | 41% |
| UK | 24 | 41.7% | **58.3%** | 12 | 92% | **8%** | 50.3% |
| **Mean (all students)** | | 52% | **48%** | | 95% | **4.7%** | |

**Figure 3. Frequencies of change in individual procrastination**

# DISCUSSION AND CONCLUSION

Academic procrastination is almost universal for students (Dietz et al., 2007; Steel, 2007), and can be seen in almost all countries and cultures. Nevertheless, cultures have different attitudes towards time in general (Hall & Reed Hall, 1990), time visions (Saunders et al., 2004) and procrastination as a specific appearance of time (Klassen et al., 2010).

In this study, students from different countries and cultures worked together in multicultural teams, on a virtual platform (In2It LMS), with scheduled pre-dictated deadlines. The research goal was to explore individual procrastination through the "eyes" of culture differences, and to examine a possible effect of multicultural teamwork on individual procrastination.

Regarding R1, the possibility of differences between cultures in students' individual and interdependent tasks procrastination, results show statistical differences between countries in procrastination of Quizzes individual assignments. According to Table 4, students from UK were the most procrastinators (58.3%), and Israeli students were the least procrastinators (42%). French students were a little bit more procrastinators than Israeli students, but much less than the UK students (43.7%). According to Hofstede's Culture Compass (Hofstede Insights, 1984), the Individualism-Collectivism dimensions of the three countries are as follows: UK is the most individualist country (89), France is less individualist than UK (71), and Israel is the most collectivist (54). The results of procrastination by country on Quizzes individual assignments are consistent with literature. Research shows that students in collectivist cultures (Israel) interpret procrastination more negatively than students from individualist cultures (UK), because procrastination might be construed as conflicting with personal/academic goals, fear of failure, and family expectations (Chong, 2007; Klassen et al., 2010). France has a higher score in Individualism-Collectivism dimensions than Israel, but lower than UK, and therefore its procrastination, according to research, is positioned between Israel and UK in the percentage of procrastination. The fact that UK students were the most procrastinators, much more than Israeli and French students, is also consistent with Ferrari et al. (2005), who examined procrastination in English-speaking countries, and found that chronic procrastination is a common occurrence among adults living in westernized, individualist English-speaking countries.

The results of procrastination by country on individual Idea submission assignments, which was also a non-mandatory task, but has the interdependent characteristic, are different than quizzes. Israeli students, who were the least procrastinators in the quizzes, have the highest percentage of procrastination in the idea submission assignment. UK and French students' procrastination percentage declined, and they became less procrastinators. The difference between results of quizzes assignments

and idea submission assignment might be explained by the difference between assignments. Although both were individual assignments, the idea submission assignment was seen on a platform by all other students, who could also comment on ideas of the other students. This finding correlates with Gafni and Geri (2010), who found that the behavior of the first students of each group when posting their assignments defined norms for the whole class. It seems that the perceived cost of procrastination may be greater for students from collectivist contexts because procrastination might be construed as conflicting with personal/academic goals and family expectations (Klassen et al., 2010). Moreover, the differences could also be explained as two different forms of perceived chronic procrastination. The quizzes could have been perceived by students as *arousal procrastination;* delays that make a person stimulated when rushing to complete tasks, and therefore affected by cultural norms of individualism-collectivism. The idea submission could have been perceived as *avoidant procrastination,* delay of tasks that completion would reflect one's abilities, such as in the eyes of the other students. In avoidance procrastination, by not completing a task by a specific deadline, the person may claim that poor performance was influenced by lack of effort or greater rates of time pressure instead of lack of personal ability (Ferrari et al., 1995). This also correlates with the reasoning for procrastination. Students in collectivist yet achievement-oriented settings may interpret procrastination more negatively than students from individualist environments. This can be explained because of higher levels of fear of failure and their stronger inclination to avoid family shame and embarrassment (Chong, 2007; Klassen et al., 2010). Israeli students, who are more collectivist than the other students, might have been procrastinators in this assignments, as they feared shame and embarrassment when other students could see their submission, and even comment on it.

Regarding R2, examining the change in individual procrastination after performing multicultural teamwork, the procrastination of teams results show that in the final assignment of multicultural teamwork (Pitch submission) almost no procrastination was found in all submissions. The difference between individual procrastination of all students before multicultural teamwork and after multicultural teamwork was dramatically cut (48% before, 4.7% after), almost mitigating the procrastination appearance for all students from all cultures. Table 6 and Figure 3 show the change in procrastination of each individual student, showing that all students except five improved their procrastination, with an average of 9 days improvement in procrastination before teamwork (quizzes) and after teamwork (post-survey). Although this research does not analyze student motivation to complete the tasks, it should be noted that both quizzes and post-survey were non-obligatory tasks; therefore, it was assumed that students had the same motivation for both tasks.

This dramatic positive effect of multiculturalism on individual procrastination may be explained using the Ely and Thomas (2001) study, who argue that if the team's diversity is seen as a learning resource for the team, it enhances adaptation to change and redefining goals, markets and products. In this study, teamwork was conducted in a higher-education learning environment, and for learning purposes, so it can be assumed that students perceived diversity as a learning resource. Also, the fact that all students, regardless of their culture, mitigated their procrastination dramatically, may be supported by adopting Tadmor et al. (2012), who found that multicultural teamwork experience enhances not only the creativity of individual team-members, but also the joint creativity of the team so that the creative whole is greater than the sum of its parts.

One of the major conflicts of multicultural teamwork is task-related conflicts that might occur because of a clash of opinions with respect to the tasks, such as adhering to timelines or different attitudes towards deadlines (Jehn, 1995). In these teams, multicultural teamwork resulted in a positive outcome of mitigating procrastination of individuals. This might be explained using the research of positive effects of multicultural teamwork, which shows that one of the major advantages of multicultural teamwork is sharing of culturally divergent knowledge, experiences, and skills. This sharing that students bring to the team allows them to create something new by interacting across traditional disciplinary boundaries, and learn from each other (Goldstein & Gafni, 2019; Lans et al., 2013).

Following Table 6, it seems that the differences between cultures in their procrastination has also been affected by the multicultural teamwork. Procrastination by culture **before** multicultural teamwork ranged from 42% to 58%. However, procrastination by culture **after** multicultural teamwork ranged from 1% to 8%. It seems that the differences in procrastination behavior and attitudes between cultures, which usually creates a conflict (Jehn, 1995), were mitigated and reduced dramatically. This can be explained by the fact that they had a shared goal that reflected a common global work culture beyond their distinct socio-cultural procrastination (Earley & Gibson, 2002; Shokef & Erez, 2006). It seems that all students perceived their multicultural teamwork as a collaboration between different cultural or national backgrounds, who have been assigned to interdependent tasks and are jointly responsible for the final results (Marquardt & Horvath, 2001).

Although this research did not analyze the pre- and post-surveys that were completed by students, but only the actual LOG data, the students' answers to the post-survey could strengthen the conclusions, and should be further researched. For example, replying to the post-survey's open-ended prompt, "*Please tell us the thing you enjoyed most about the Global Entrepreneurship course*", many students replied that they enjoyed the teamwork a lot and that it contributed to their learning, and motivation. Some of the answers are reported here: "*I enjoyed the motivation and connection with my group*"; "*I enjoyed meeting people that think different*"; "*I enjoyed working with other people from other countries*"; "*I enjoyed the leadership of my team and the experiential cooperation*". The students' answers to the post-survey reflect their enjoyment from the multicultural teamwork, which can strengthen the connection between procrastination, motivation and learning, as reflected in this research. This connection should be further researched.

Regarding gender, no differences were found between cultures or even in the same culture. This correlates with some studies (Gafni & Geri, 2010a; Kachgal et al., 2001), but not with others (Özer et al., 2009). Further research is needed to explore gender diversity in multicultural teams, as this was not the aim of this study.

## THEORETICAL AND PRACTICAL CONTRIBUTIONS

The purpose of this study was to discover usage differences in learning and task performance by students of different cultures, especially by examining procrastination patterns and behaviors from a national cultural perspective, exploring the effect of multicultural virtual teamwork on students' individual procrastination. Research has shown that procrastination is common in general populations, and is almost universal among university students (Steel, 2007); nevertheless, a student's academic practices, such as study time and procrastination, may be influenced to culturally different understanding of academic values and behaviors (Klassen et al., 2010). This study aims to further discover the effects of multicultural teamwork on individual procrastination, comparing the differences between cultures, if differences exist. Existing studies have focused on comparing US and Canada, with Northern European culture or Middle Eastern cultures (Ferrari et al., 1995; Klassen et. al., 2010; Olson & Olson, 2003), but no Mediterranean cultures. This study focuses on Israel, as a Mediterranean culture, compared with European cultures (UK and France).

Klassen et al. (2010) suggest that future cross-cultural procrastination research should focus on incorporating other methodological approaches. The uniqueness of this study is also using and analyzing actual data of student procrastination from logs (In2it LMS platform). Other studies of procrastination in multicultural student teams have measured perceived procrastination, collected using surveys based on Tuckman's 16-item procrastination measure as collected from students' subjective self-reported data (surveys) (Klassen et al., 2010; Tuckman, 1991). Understanding the positive effect of virtual multicultural teamwork in mitigating the negative tendency of students from all cultures to procrastinate, as concluded in this study, can provide a useful tool for higher education to mitigate procrastination in teamwork processes.

The results of this study could also be used by the global business environment that requires working in international virtual multicultural teams. With the development of online technological tools, and following the COVID-19 times, as teams cannot meet face-to-face and are forced to work virtually on a daily basis, it is important to control the implications of procrastination in their multicultural teamwork.

## LIMITATIONS AND FURTHER RESEARCH

Results of this study clearly show a positive effect of multicultural teamwork on student procrastination, by examining the actual procrastination before and after multicultural teamwork. Yet, further research is needed to understand the reasoning for this effect. Is it the specific combination of cultures (Israel, UK, and France)? Further research is needed to explore other cultural combinations of teams, and strive for the optimal mix in relation to student procrastination. Also, as the global higher education environment attracts students from all cultures and countries, further research should examine the implications of students' origin.

Moreover, this study was conducted on a virtual platform (In2it LMS on Moodle platform) that was designed as a psychologically safe virtual environment, yet the platform's effect on students' procrastination was not measured. Further research should examine this effect, as an intervening mechanism or as a cause for the effect of multicultural teamwork on students' individual procrastination.

This research had several methodological limitations. First, two-thirds of participants in this study were from Israeli culture, and the number of participants from UK was very low. This might have affected the results, and the teamwork process. Second, not all students were graded for this project, so they had different motivation to participate. The relation between procrastination and motivation was broadly explored in prior research and should be further examined in relation to multicultural teams. Finally, the effect of multicultural teamwork was examined only after one task submission, the final task. Further research is needed to explore the effect during multicultural teamwork processes.

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# BIOGRAPHIES

**Ruti Gafni** is an Associate Professor and the Head of the Information Systems B.Sc. program at The Academic College of Tel Aviv Yaffo. She holds a PhD from Bar-Ilan University, Israel (in the Business Administration School), focusing on Information Systems, an M.Sc. from Tel Aviv University and a BA (Cum Laude) in Economics and Computer Science from Bar-Ilan University. She has more than 40 years of practical experience as Project Manager and Analyst of information systems.

**Anat Goldstein** is a lecturer at the Information Systems B.Sc. program, and the Head of the Entrepreneurship track in the Management and Economics B.A program, at The Academic College of Tel Aviv Yaffo. She holds an MA in Education management and an L.L.B (LAW) from Tel Aviv University. She is currently working on her PhD focusing on virtual technological platforms for entrepreneurial learning. Anat has more than 15 years of practical experience as senior marketing and business development director in the High-tech sector, and in Corporates. She has more than 5 years' experience in developing and managing face-to-face and virtual Hackathons and Accelerators.