Training team Creativity with Lego Serious Play: Upside and Downside of team Diversity

Frans G. Stel and Peter T. van den Berg
Twente University, Enschede, The Netherlands
f.g.stel@utwente.nl

Abstract: We trained 40 teams using Lego Serious Play (LSP), a facilitated workshop method in which the aspects of visualization, commitment, fun and shared storytelling are used. LSP improves open and participatory communication, collaborative learning and intuitive imagination and reduced 'free ridership' in innovation teams; it was easier to achieve a 'train of thought' or 'flow' within a team. LSP is a promising creativity method, although its efficacy is influenced by conditions. Teams can enhance or disrupt creative performance. Different mindsets within creative teams may lead to a broader pallet of new perspectives in the ideation phase of innovation in which divergent thinking is important to explore novel viewpoints. However, diversity may lead to relationship conflicts in a team. We address the dilemma of achieving synergistic benefits from team diversity while managing negative interpersonal tensions between heterogeneous team members in relation to motivational aspects and team climate and summarize this in a significant three-path mediation model. We found a highly significant path with team performance of team diversity, commitment, and 'voice' (i.e. the extent to which team members are encouraged to express their views in the team). Team diversity has a potentially upside effect on creative performance, as well as a practical downside effect: it can be a source of interpersonal tension and intergroup biases and consequently less commitment leading to a less open team climate, resulting in lower team performance.

Keywords: Team creativity; personality; team diversity; commitment; team climate

1. Introduction

1.1 Team creativity

Creativity is an important 21st century skill (World Economic Forum, 2020). It is defined as the generation of original and appropriate ideas; originality requires divergent thinking, whereas appropriate ideas convergent thinking (Baas et al., 2015). Creativity is determined by cognitive, emotional and neural processes. Cognitive processes, include cognitive flexibility and cognitive persistence; mood and motivational states influence creativity (Nijstad et al., 2010). Cognitive flexibility, divergent thinking or idea originality is operationalized as the number of new viewpoints whereas cognitive persistence as convergent thinking, detailing ideas into greater accuracy. Baas et al. (2008) researched motivational or emotional aspects of creativity, such as happiness, joy or dislikes. Negative emotions reduce divergent and flexible thinking, although the effects depend upon circumstances.

Team creativity is determined by characteristics of individual team members, as well as the combination of traits of team members (Gilson et al., 2015). In teams, two or more individuals socially interact (face-to-face or increasingly, virtually) and face a certain degree of interdependence regarding executing tasks and processes (Kozlowski & Ilgen, 2006). Adaptability of team members, interpersonal communication and coordination of activities are drivers of team performance (Mathieu et al., 2014). Therefore, it is important to involve members in a team who can conduct these behaviors. Won et al. (2014) found that synchronized nonverbal behavior leads to greater team creativity. Team composition affects team creativity, which in turn promotes innovation implementation depending on the team's climate for innovation. (Somech & Drach-Zahavy, 2013). Team creativity can be defined in terms of outcomes or processes. Team creative outcome concerns the production of new and useful ideas of products and services, whereas creativity as a process concerns the journey toward possibly producing creative outcomes through the collaborating behaviorally, cognitively, and emotionally (Gilson & Shalley, 2004; Gilson et al., 2015). Creative processes are an important ingredient for creative outcomes. In this study we relate to the distribution of personal attributes among interdependent team members, in particular we focus on team members' heterogeneity in terms of personal behavioral preferences.

1.2 Team diversity

Team diversity has multiple dimensions, e.g. –gender, age, race, religion, or personality, attitudes, and values, coined as "diversity mindsets"; researchers emphasize the importance to consider differences that may not be readily visible: differences in mindsets (Knippenberg & Schippers, 2007).

Diversity can potentially boost team performance. Team diversity may stimulate team creativity because the team members are inclined to introduce different or divergent perspectives and a variety of knowledge, skills, abilities that consequently may lead to more innovative ideas (Wang et al., 2016; De Dreu et al., 2008**)**. However, there is also a downside of team diversity: teams are often unable to benefit from their diversity (Homan et al., 2007). Despite the growing interest in team diversity, little is known about the mechanisms through which personality traits affect team climate for creativity and creative team performance. This research attempts to fill this gap. Understanding team processes is vital to improve team performance outcomes in organizations (Klonek et al., 2019). Team diversity it is a double-edged sword: it can enhance as well as disrupt creative team performance (Joshi & Roh, 2009). On the one hand, diversity may lead to task-related disputes coined as 'creative friction' through which within the team new perspectives can be developed. Diversity of viewpoints is beneficial for nonroutine tasks associated with divergent thinking tasks of the fuzzy front end of innovation: exploration. Here, imagination and exploring unusual out-of-the-box ideas are essential. On the other hand, diversity may lead to relationship conflicts in a team, or to a lower level of commitment and psychological safety which may complicate the implementation of innovative projects.

Exploitation activities require less team diversity: routinization, refining the best options, elimination and clear decision making to achieve efficiency in performance of more repetitive tasks. Most teams perform tasks with both explorative and exploitative components and face tensions between these activities (Lavie et al., 2010). Although a certain level of team diversity is beneficial, team members may also respond negatively to dissimilar others resulting in reduced team performance (van Knippenberg et al., 2004). It is thus essential for teams to ensure a creative team climate in which it is safe to participate in the decision-making and that encourages team members to introduce new ideas or opinion: a team climate of psychological safety, voice, and participative decision making; a supportive climate makes effective use of the potential if the group (Carson et al., 2007; De Dreu et al., 2008; Edmonson, 1999; Muehlfeld et al., 2011). They conclude that it is an interesting research avenue to acquire a better understanding of harvesting potential benefits of diversity of mindsets within teams (Knippenberg & Schippers, 2007).

We address this dilemma of achieving synergistic benefits from team diversity while managing team processes and negative interpersonal tensions between heterogeneous team members in relation with motivational aspects and team climate. Our research question is: *What are the upside and downside effects of team diversity related to team creative performance when training team creativity with Lego Serious Play?*

1.3 1.3 Lego Serious Play

Lego Serious Play®[1] (LSP) is a facilitated workshop method in which the aspects of visualization, commitment, fun and storytelling are combined. LSP is a good example of challenge-based learning. In LSP, participants generate new solutions to wicked problems by creating symbolic and metaphorical models. They build these models with specific Lego Serious Play bricks and discuss individual and team metaphors through storytelling with the aim to enhance creativity in ideation exercises and shared understanding of the implementation aspects. This process coined as *shared storytelling* (Kristiansen & Rasmussen, 2014; Schulz et al., 2015).

LSP is a tool-kit and method for collaborative creativity. In contrast to usual brainstorming methods as mind mapping, or the 'six thinking hats' method. It offers the advantages of tangibility and unpredictability: the tangible shapes, sizes and colors of the Lego bricks offer infinite unpredictable combinations (Al-Jayyousi & Durugbo, 2020). In addition, it has the advantages of open and participatory communication, collaborative learning, and incites intuitive imagination (Simon et al., 2020). LSP is a method that facilitates creative problem-solving and team building (Al Jayyousi & Durugbo, 2020). It involves all participants equally without hierarchical constraints. This creates an open team environment that stimulates conversation and discussion and avoids 'free ridership' in innovation teams (McCusker, 2020). Because of these factors, it is easier to achieve a 'train of thought' or 'flow' within a team, i.e. building upon each other's ideas, known as interactional synchrony (Zenk et al., 2021). Furthermore, LSP stimulates commitment to the team, resulting in active participation in the decision-making. According to Primus & Jiang (2019), LSP facilitates developing novel and surprising solutions to problems. Zenk et al., 2021 conclude that LSP improves the creative team output.

LSP is a form of a serious game, that uses constructionism (converting abstract ideas into visible and tangible metaphors), hand-mind connection (building on the complex interplay between the hands and the brain), and

[1] LEGO Serious Play is a registered trademark of the LEGO® company.

playful fun to stimulate imagination (Frick et al., 2015). The LSP method is based on four essential steps (1) introducing a wicked challenge to the participants by a facilitator; (2) constructing potential answers to the challenge making metaphoric models with LEGO bricks individually. While building their models, participants assign a meaning to them and develop a story covering the meaning. In doing so, they construct new knowledge; (3) sharing stories and the meanings assigned to the models with each other; (4) reflecting on what is heard and seen in the models (Frick et al., 2015).

Our LSP serious games consisted of the following phases: after the introduction of game and assignment, the participants conducted a warming-up skills exercise to familiarize themselves with the Lego bricks. After this, we introduced the creative task of the serious game: to develop an innovative and feasible solution to the accessibility of education for all boys and girls in low-income countries. This task is inspired by the UN Sustainable Development Goal # 4 (Education for all). After this, participants silently developed individual solution metaphors and explained these individual solutions to each other. In the next phase, they combined the best elements of the individual models, and developed a shared solution. To increase reality and test robustness of the team solution, in the last phase of our LSP-process, the team added internal and external relationships and discussed the consequences through discussing 'what-if' questions. These indicated whether relationships were flexible or inflexible, and to what extent the relationships were vital to the solution (of major or minor importance). In their 'what-if' discussion, they considered what would happen to the feasibility of the solution if major disruptions would occur, e.g. climate change, corruption, war, famine. To what extend were the model to be adjusted when major external circumstances would occur? In Figures 2 and 3, we illustrate an LSP-workshop.

Figure 2: Example of solution of an LSP-workshop

Figure3: Visualization of shared storytelling

Source: own research

2. Theory and hypotheses

2.1 Team diversity and commitment

People can be intrinsically motivated toward a task (getting satisfaction or joy), or extrinsically motivated (based on external pressures such as deadlines or positive motivators such as incentives and recognition). Both types of motivation matter (Amabile & Pratt, 2016). In heterogeneous teams, the personal preferences of team members differ substantially. They possess unique and indispensable information, knowledge, and perspectives relevant to the team tasks. When team members have to deal with different preferences and opinions of their colleagues, they may be inspired by one another, if they are competent to deal with diversity, or feel irritated, if they cannot handle the differences (Wang et al, 2016). Dealing with diversity is more complicated because people need to be motivated to spend sufficient energy in the collaboration with their team members. Diverse teams tend to be divided in subgroups or faultlines; a categorization of 'we' and 'them'. This division usually has a negative impact on team processes and performance (Homan et al., 2007). Dealing effectively with team diversity requires more communication skills and team coordination. The intrinsic motivation or engagement to participate in the team may decrease if individual contributions are not identifiable in team tasks. An individual's reluctance to contribute to the group product even when the individual contributions are identifiable and evaluable is called free riding behavior. Other team members may feel exploited by free riding teammates, and wait to see how much effort others will put into a group before they put any in (Hütter & Diehl, 2011). We can conclude that team diversity complicates communication and expect:

H1: Team diversity is related to a lower commitment to the team.

2.2 Commitment and a supportive team climate

Commitment is a strong predictor of creative performance (Gilson & Shalley, 2004; Zhang & Bartol, 2010). Creative process engagement is positively related to the so-called 'voice' aspect of a supportive climate (Yang et al., 2021). Voice is defined as the extent to which a team member is encouraged to express his or her views to other team members (Yang et al., 2021). Engagement of team members in creative processes involves behavioral, cognitive, and emotional efforts. Only committed individual team members are willing to spend these efforts to a team (Yang et al., 2021). Engagement in creative processes will be reduced when individuals perceive other team members as threatening (Gilson & Shalley, 2004). Team members are interdependent upon each other to fulfill the team's aims. They rely on fruitful relationships with the others, or on the degree to which team members can count on each other to achieve important outcomes. Interdependency concerns the task-component of a team collaboration, whereas commitment the psychological assessment of that interdependence (Le & Agnew, 2003). Commitment can be strengthened by the amount of satisfaction that one derives from a relationship and can be weakened by possible alternatives to that relationship (Le & Agnew, 2003). Commitment is an essential ingredient of a supportive team climate; therefore, we postulate:
H2: Commitment to a team is related to a supportive team climate, i.e. support for raising your voice.

2.3 Supportive team climate and team performance

A supportive team climate may contribute to team creative performance because team members are able and committed to contribute to the team through expressing their views to the team (Gilson & Shalley, 2004; Yang et al., 2021). Such a team climate enables out-of-the-box thinking, creativity, and daring to take risks. It motivates engagement and involvement in exploratory and exploitative learning, resulting in more creative team performance (Edmondson & Lei, 2014). In a supportive team climate, team members believe that their fellow team members share goals and aims; they are allowed to take risks, openly exchange information, and consequently dare to introduce new viewpoints. There is tolerance, or even encouragement of taking risks, trying new approaches, and participate actively in creative problem solving (Gilson & Shalley, 2004; Edmondson, 1999). Voice, in which extent team members are able and willing to express their views, is a key driver for promoting creative performance because of higher creative process engagement (Yang et al., 2021). Voice is associated with social interaction, facilitation, and participative behaviors in teams through increased engagement and involvement to the team tasks. Therefore, we propose:
H3: A supportive team climate (i.e. voice) leads to higher creative team performance.

Our research model is visualized in Figure 4.

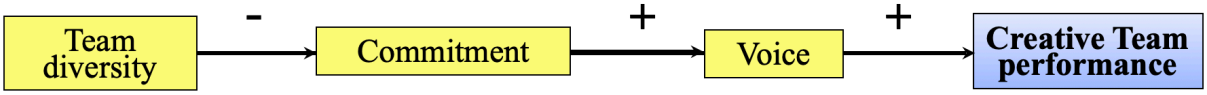

Figure 4 : hypothesized path model between team diversity and creative team performance

3. Research methodology

3.1 Data collection

In the period 2018 – 2022, we gathered data by means of web questionnaires via Qualtrics software two weeks before and direct after the creativity training. In an ex-ante questionnaire, respondents assessed their mindsets, in an ex-post questionnaire they scored the creative team performance. The study was conducted with 40 teams of 172 (under) graduate students and teachers from Universities in Groningen, Twente, Tilburg and Brabant (the Netherlands) in the period 2018–2012. The research took place in the context of skills and training courses that were a part of the study programs. The standardized team assignment consisted of an analytical and an innovative component. After the assignment, the students filled in an evaluative questionnaire concerning the team climate and the team performance. Participants were, on average, 25.5 years old.; 61.0% had a Dutch background, 12.4% were German, and 26.6% had 34 other nationalities. Teams had, on average, 4 members, ranging from three to six. In total, 51.4% male and 48.6% females participated in the research.

3.2 Measures

Of all the constructs we will list the dimensions, example items, and their Cronbach's alphas insofar applicable.

Team diversity. We observe team diversity by examining differences in mindsets within a team through a self-report inventory of behavioral preferences: the Insights Discovery Preference Evaluator (IDPE), based on Carl

Jung's theory on personality and behavioral styles (Jacobi, 1973). IDPE integrates task versus relationship orientation with introspective or extroverted attitudes. IDPE distinguishes four behavioral styles or colors (see Figure 5): 'Cool Blue' (Introvert Thinking), 'Fiery Red' (Extravert Thinking), 'Earth Green' (Introvert Feeling) and 'Sunshine Yellow' (Extravert Feeling). A Cool Blue mindset is associated with conscientiousness, precise decision-making, strict alignment of priorities, and consistency of methods. In contrast, a Sunshine Yellow mindset prioritizes flexibility, openness to experience, and idea networking. People with high Fiery Red scores focus on achieving results, and quick action. In contrast to Fiery Red, people with high scores on Earth Green emphasize reliability, cohesion within the team, a positive atmosphere, mutual respect and authenticity. Different tasks demand for different mindset characteristics. The results the IDPE-questionnaire are four colors scores. Our measure of team diversity was the average of the standard deviation scores of the team members.

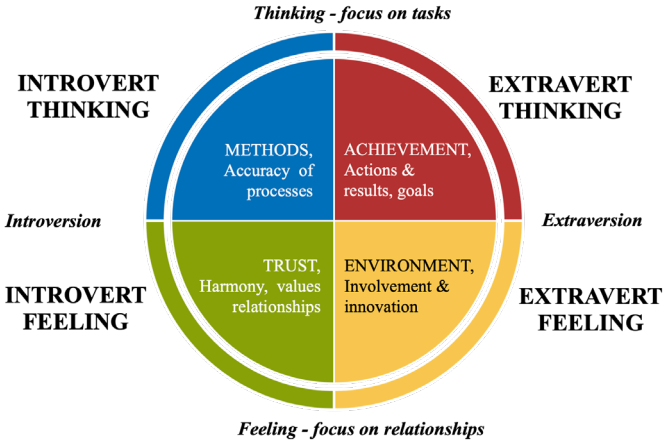

Figure 5: Four different mindsets of the Insights Discovery Preference Inventory

Team climate. We examine a team climate by the scale of 'voice'. This scale exists of four 5-points Likert items: My team members were encouraged to speak up to test assumptions about discussed issues; As a member of this team, I have a real say in how this team carries out its work; Everyone on this team has a chance to participate and provide input; My team supports everyone actively participating in decision making; α = .84 (Carson et al., 2007).

Team performance. Our outcome variable consists of two items derived from Pearce & Sims (2002): "The team faced new problems effectively" and "The team did a very good job". α = .70.

Commitment. We asked the participants to rate their commitment on a 0-100% scale.

4. Results

4.1 Descriptive statistics

In the bivariate correlations, we find a negative relation between team diversity and commitment. Commitment is positively associated with 'voice' and team performance. Voice is strongly related to performance. In Table 1, we report the descriptive statistics.

Table 1: Correlations Among the Variables, Means and Standard Deviations

	M	*SD*	1	2	3	4	5
1. Gender[a]	1.44	.50					
2. Age	24.43	5.27	.07				
3. Team diversity	1.13	.33	-.05	-.04			
4. Commitment	73.33	23.00	.11	.00	-.34*		
5. Voice	5.80	.96	-.01	-.14	-.15	.52***	
6. Team performance	5.80	1.07	-.02	-.08	-.09	.41***	.59***

[a] 1 = male; 2 = female *Note.* The correlations with team diversity are calculated at the team level (n = 40) and those among the other variables at the individual level (n = 172). *p < .05; ***p < .001.

4.2 Multivariate regressions

The results of the multilevel analyses are presented in Table 2. They show that - corrected for gender and age - color diversity is significantly related to commitment. The means that Hypothesis 1 is supported: indeed, team diversity leads to lower commitment to the team.

In addition, the relationship between commitment and 'voice' - corrected for gender, age and color diversity - is significant, supporting Hypothesis 2: commitment to a team can be associated with a supportive team climate with voice. At last, 'voice' and commitment - corrected for all variables - are significantly related to creative team performance. This implies that also Hypothesis 3 is supported: a supportive team climate (i.e. voice) leads to higher creative team performance.

Table 2: Results of Multilevel Analyses

Independent variables	Commitment	Voice	Team performance[a]
Gender[a]	.13	-.10	-.02
Age	-.07	-.10	-.05
Team diversity	-.23**	.05	.01
Commitment		.43***	.15*
Voice			.49***
-2 Restricted log	669.81	561.59	425.88

[a] 1 = male; 2 = female. *Note.* Presented are standardized estimates. Team diversity is a team level variable and the other variables are at the individual level. *p < .05; **p < .01; ***p < .001.

We found a highly significant path model between team diversity, commitment, 'voice' and team performance. A healthy team climate, in which team members are encouraged to contribute (high 'voice' in the team) is a strong predictor for team performance. High commitment of the team members enables a team climate with high 'voice'. However, team diversity can be negatively associated with commitment to the team. We conclude that although team diversity might be needed to generate new perspectives, diversity also might reduce team performance because of a possible negative effect on individual commitment to the team's processes and outcomes.

The main results are graphically presented in the path model in Figure 6. This is a three-path mediation model describing the mediation between team diversity and team performance through commitment and 'voice' in a series. Taylor et al., 2008, indicated that such a model is supported when: (1) the relationship between the independent variable and the first moderator is significant, (2) the relationship between the first and the second moderator, while controlling for X, is significant, and (3) the relationship between the second moderator and the dependent variable, while controlling for the independent variable and the first moderator, is significant. The results in Table 2 show that our three-path mediation model is supported. We concluded that the relationship between team diversity and team performance is mediated by commitment and 'voice' in a series.

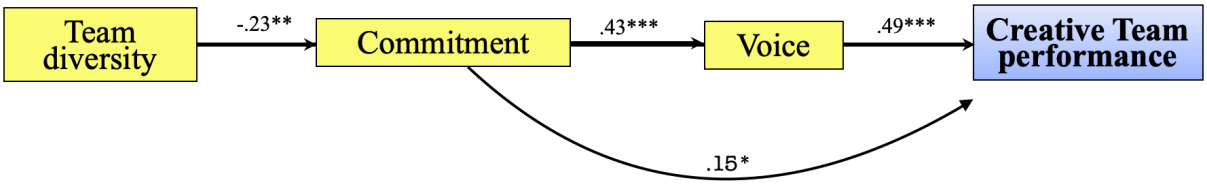

Figure 6: Path model Team diversity – commitment-voice and team performance

5. Discussion

Working with people with different mindsets in a team is more difficult than working with similar people. Even some refer to "Surrounded by idiots" when collaborating with team members who have different personal preferences or personalities (Erikson, 2019). Therefore, teams should be aware of the upside and downside aspects of their team's diversity and understand the impact of it. They should recognize differences, connect and engage with each other, even if this might be difficult. Identifying and discussing differences in a team might be challenging, but can play an important role in handling the diversity in a team more effectively (Van Knippenberg & Van Ginkel, 2021). In our research, we found a highly significant path between team diversity,

commitment, 'voice' and team performance. Although team diversity can have an upside effect on creative performance due to a broader pallet of new perspectives in the ideation phase of innovation, team diversity involves a downside effect: it can be a source of interpersonal tension and intergroup biases and consequently lack of commitment leading to a less open team climate resulting in lower team performance (van Knippenberg et al., 2004).

Team diversity of mindsets complicates communication between team members and consequently the probability of conflict and turnover is higher (Goerzen & Beamish, 2005). In general, people tend to favor, or trust similar others and are more willing to cooperative with them (Nijstad, 2009). As a consequence, members of diverse team trust each other less and are less willing to cooperate closely, and tend to have more conflicts. It can be expected that heterogenous teams have lower team performance.

Working with storytelling and using the visual elements of LSP had a positive effect on the commitment, motivation, and fun of the participants. Shared storytelling is an interesting method to engage all team members and create a supportive team climate. During the LSP-sessions, we identified six important success factors: a suitable assignment, team size, not too dominant team members, active facilitation, team tenure, and sufficient time. First, a creativity assignment should be wicked i.e. not too narrowly defined in line with a paradox for team creativity: the tension between freedom and constraint (Rosso, 2014). On one hand, creative teams want not to be limited in their creativity thinking. On the other hand, those limitations can provide helpful boundaries to provoke and structure the collective creative process (Rosso, 2014). Second, team size has contradictory effects on team creative performance. On the one hand, if knowledge is combined effectively, a larger team size may result in more team innovation (Peltokorpi & Hasu, 2014). However, larger teams might complicate social processes within the team, and may result in more frictions between team members, a less-supportive team climate and less individual commitment to the team. When focusing on *shared* storytelling, a team should have sufficient team members to explain and reflect with. In our research, the ideal team size was 4 people. In larger teams, we noticed more faultlines and less 'team flow' resulting in lower team creativity. Third, when members within teams played a too-dominant role, commitment of other team members tended to be lower, and the 'voice' within the team tended to be less resulting in less creative team performance. Fourth, facilitators play an important role at the reflection phase of LSP. They are expected to ask in-depth questions to the team regarding the team processes and stimulate team reflexivity. This implies that a facilitator should be able to coach team processes adequately, including non-verbal communication. Fifth, team tenure impacts a supportive team climate and consequently team performance; when team members are familiar with one another, they dare to contribute easier to the team and tend to be more committed after having developed more social capital within the team (Hu & Randel, 2014). Last, sufficient time for an LSP-trajectory is important; LSP consists of various phases of build-explain and discuss metaphors. Limited time available for the entire cycle of LSP-steps, resulting in time pressure tend to reduce creative team performance (Chirumbolo et al., 2004).

6. Conclusion, contribution, practical implications and limitations

We trained the 21st century skills critical thinking, creativity, collaboration, and communication in a serious game challenge-based learning setting. We configured teams with varying diversity of mindsets based on IDPE: we distinguished teams with low and high diversity. The team members gave each other direct feedback of their ideas with a high level of interactivity. We used Lego Serious Play, a facilitated workshop method in which the aspects of visualization, commitment, fun and shared storytelling are used. The teams generated new solutions by creating joint symbolic and metaphorical models. In the LSP-processes, we noticed as expected open and participatory communication, collaborative learning and intuitive imagination. In general, LSP reduced 'free ridership' in innovation teams; it was easier to achieve a 'train of thought' or 'flow' within a team. Therefore we conclude, LSP is a promising creativity method, although its efficacy is influenced by conditions: (1) a wicked challenge; (2) an adequate team size; (3) healthy team dynamics – absence of dominant team members; (4) professional facilitation; (5) team tenure; and (6) sufficient time available.

Commitment to the team, resulting in active participation in the decision-making leading to more creative team output, was dependent upon diversity of mindsets within the team: more diversity resulted in less commitment. Team diversity of mindsets has potential advantages. Being able to reap these benefits is depending on whether the disadvantages of team diversity can be mitigated: lower commitment and less supportive team climate due to less 'voice'. Team reflexivity - a deliberate process of discussing team goals, processes, or outcomes - can function as an antidote to tackling these disadvantages. Team reflexivity can help to prevent misunderstandings

in a demanding, knowledge-intensive environment (Schippers et al., 2014). Team learning is enhanced through facilitated knowledge sharing. Teams that are capable of identifying knowledge gaps and crossing knowledge boundaries integrate knowledge involve intense participation and learning of all team members. The more diverse teams are, the greater the dynamics of knowledge assimilation and transfer, to each other within a creative team. Teams increase their capacity to deal with their diversity when team members are able to adjust themselves to organize and synthesize knowledge in the entire team (Yeo, 2020).

Limitations: Like all research, the contribution of this study can be assessed only considering its purpose and methods. There are some limitations to our study. First, we used self-assessed scores of team performance. To increase the robustness of our conclusions, future research would clearly benefit from incorporating multiple and objective measures of team creativity. Second, our data were based on a limited student sample. We suggest to expand the research to business environments, include qualitative research to detail and unravel the social processes within creative teams, and increase the sample of the research. Third, the results were generated in a specific context: a short-term creative problem-solving assignment of ad hoc teams using the LSP method. It would be interesting to retest the research using a creative problem-solving assignment in a longer period, within teams in which members have more (and longer) experience with each other, or using other creative techniques.

Contribution: This paper increases the understanding of preferred team diversity and addresses the dynamics of innovation team processes. Team composition should be adjusted to the phase of the innovation (exploration vs. exploitation). In exploration, more team diversity is needed than in exploitation. To implement innovations successfully, team members must be (1) aware of the preferred styles of behavior of themselves and their team members, (2) adapt and connect with their team members and (3) learn to benefit from differences with the team to improve creative team performance through increased reflexivity.

Practical implication: Innovation leaders and their teams can use our results to deal effectively with team diversity in skills trainings through awareness of relationship dynamics in different phases of the innovation process, to improve a supportive innovation team climate and boost commitment to the innovation teams. We advise to include issues of team composition, preferred styles of behavior and cooperation styles within teams in educational and training programs of members of innovation teams.

References

Al-Jayyousi, O.R. & and Durugbo, C.M. (2020). Co-Creative Learning in Innovation Laboratories Using Lego Serious Play Workshops. *International Journal of Innovation and Technology Management, 17*(7), 2050051-1/ 26.

Amabile, T. M. & Pratt, M. G. (2016). The dynamic componential model of creativity and innovation in organizations: Making progress, making meaning. *Research in Organizational Behavior, 36*, 157-183.

Baas, M., De Dreu, C. K. W., and Nijstad, B. A. (2008). A meta-analysis of 25 years of mood-creativity research: hedonic tone, activation, or regulatory focus? *Psychological Bulletin, 134* (6): 779-806.

Baas, M., Nijstad, B. A., and De Dreu, C. K. W. (2015). The cognitive, emotional and neural correlates of creativity. *Frontiers in Human Neuroscience,* 275: 1-2.

Carson, J. B., Tesluk, P. E., and Morrone, J. A. (2007). Shared leadership in teams: a investigation of antecedent conditions and performance. *Academy of Management Journal, 50*(5), 1217-1237.

Chirumbolo, A., Livi, S., Mannetti, L., Pierro, A., and Kruglanski, A.W. (2004). Effects of Need for Closure on Creativity in Small Group Interactions. *European Journal of Personality, 18*(4), 265 – 278.

Coyne, R. (2005). Wicked problems revisited. Design studies, 26(1), 5-17.

De Dreu, C. K. W. and Gelfand, M. J. (ed., 2008). *The psychology of conflict and conflict management in organizations.* Society for Industrial and Organizational Psychology, Taylor & Francis Group ltd, New York, USA.

Erikson, T. (2019). *Surrounded by idiots, how to understand those who cannot be understood*. Vermillion, London, UK.

Frick, E., Tardini, S., and Cantoni, L. (2015). *Lego Serious Play applications to enhance creativity in participatory design*. in: Reisman (ed.): *Creativity in Business", Knowledge Innovation and Enterprise (KIE)* Conference Book Series, 202 – 210.

Gallagher, S. E., & Savage, T. (2020). Challenge-based learning in higher education: an exploratory literature review. Teaching in Higher Education, 1-23.

Garud, R. (2013). A narrative perspective on entrepreneurial opportunities. Academy of Management Review, 38, 157-160.

Gauntlett, D., (2007). Creative explorations, new approaches to indentities and audiences.Routledge, Taylor & Francis Group, New York & London

Gilson, L. L. and Shalley, C. E. (2004). A Little Creativity Goes a Long Way: An Examination of Teams' Engagement in Creative Processes. *Journal of Management, 30(*4): 453–470.

Gilson., L. L. Lim, H. S., Litchfield, R. C., and Gilson, P. W. (2015). *Creativity in teams: a key building block for innovation and entrepreneurship*. Oxford University Press, NY, USA. In: Shalley, C. E. Hitt, M. A., and Zhou, J. (2015): *The Oxford Handbook of Creativity, Innovation, and Entrepreneurship.*

Homan, A. C., van Knippenberg, D., Van Kleef, G. A. and de Dreu, K. W. (2007). Bridging Faultlines by Valuing Diversity: Diversity Beliefs, Information Elaboration, and Performance in Diverse Work Groups. *Journal of Applied Psychology*, 92(5), 1189-1199.

Hu, L & Randel, A.E. (2014). Knowledge Sharing in Teams: Social Capital, Extrinsic Incentives, and Team Innovation. *Group & Organization Management, 39*(2), 213–243.

Hütter, M. & Diehl, M. (2011). Motivation losses in teamwork: The effects of team diversity and equity sensitivity on reactions to free-riding. *Group Processes and Intergroup Relations, 14* (6), 845 - 856.

Jacobi, J. (1973). The psychology of C. G. Jung. Yale University Press,1973.

Joshi, A., and Roh, H. (2009). The role of context in work team diversity research: a meta-analytic review. *Academy of Management Journal*, 52(3): 599-627.

Klonek, F., Gerpott, F. H., Lehmann-Willenbrock, N., & Parker, S. K. (2019). Time to go wild: How to conceptualize and measure process dynamics in real teams with high-resolution. *Organizational Psychology Review*: 1-31.

Knippenberg, D. van and Schippers, M.C. (2007). Work group diversity. *Annual review of Psychology, 58,* 515-541.

Kozlowski, S. W. J., and Ilgen, D. R. (2006). Enhancing the effectiveness of work groups and teams. *Psychological Science in the Public Interest, 7*(3), 77-124.

Kristiansen, P. and Rasmussen, R. (2014). Building a better business, using the Lego Serious Play Method. Wiley & Sons, New Jersey, USA

Lavie, D., Stettner, U., and Tushman, M. L. (2010). Exploration and exploitation within and across organizations. *The Academy of Management Annals, 4*, 109 - 155.

Le, B. and Agnew, C. R. (2003). Commitment and its theorized determinants: A meta-analysis of the *Investment Model. Personal Relationships, 10* (1), 37-57.

Mathieu, J.E., Tannenbaum, S.I., Donsbach, J.S., and Alliger, G.M. (2014). A review and integration of team composition models: moving toward a dynamic and temporal framework. *Journal of Management, Jan, 40*(1), 130-160.

McCusker, S. (2020). Everybody's monkey is important: LEGO® Serious Play® as a methodology for enabling equality of voice within diverse groups. *International Journal of Research & Method in Education, 43*(2), 146-162, DOI: 10.1080/1743727X.2019.1621831.

Muehlfeld, K., Van Doorn, J., and Van Witteloostuijn, A. (2011). The Effects of Personality Composition and Decision-Making Processes on Change Preferences of Self-Managing Teams. *Managerial and Decision Economics*, *32*, 333-353.

Niemi, H. & Multisilta, J. (2015). Digital storytelling promoting twenty-first century skills and student engagement.Technology, Pedagogy and Education, Vol. 25, No. 4, 451–468, http://dx.doi.org/10.1080/1475939X.2015.1074610

Nijstad, B. A., De Dreu, C. K. W. And Rietzchel, E. F. (2010). The dual pathway to creativity model: creative ideation as a function of flexibility and persistence. *European Review of Social Psychology, 21*, 34- 77.

Nijstad, B.A. (2009). *Group Performance.* Psychology press, USA.

Pearce, C. L. and Sims, H. P. (2002). Vertical versus shared leadership as predictors of the effectiveness of change management teams: an examination of aversive, directive, transactional, transformational, and empowering leader behaviors. *Group Dynamics: Theory, Research, and Practice*, 6(2): 172-197.

Peltokorpi, V. and Hasu, M., (2014). How participative safety matters more in team innovation as team size increases. *Journal of Business Psychology, 29*, 37-45.

Primus, D. J. & Jiang, C. (2019). Crafting better team climate: the effects of using creative methods during team initiation. *International Journal Technology Management*, *79* (3/4), 299 – 320.

Qian, M., & Clark, K.R. (2016). Game-based Learning and 21st century skills: A review of recent research. *Computers in Human Behavior, 63*, 50-58.

Rosso, B.D. (2014). Creativity and Constraints: Exploring the Role of Constraints in the Creative Processes of Research and Development Teams. *Organization Studies, 35*(4), 551 – 585.

Schippers, M. C., Edmondson, AC., and West, M. A. (2014). Team Reflexivity as an Antidote to Team Information-Processing Failures. *Small Group Research, 45*(6) 731–769, DOI: 10. 1177/1046496414553473.

Schulz, K.P., Geithner, S., Woelfel, C., and Jens Krzywinski (2015). Toolkit-Based Modelling and Serious Play as Means to Foster Creativity in Innovation Processes. *Creativity and Innovation Management, 24*(2), 323-340.

Sergeeva, N. & Trifilova, A. (2018). The role of storytelling in the innovation process. *Creativity and Innovation Management, 27,* (4), 489-498.

Simon, O., Neuhofer, B., & Egger, R. (2020). Human-robot interaction: Conceptualising trust in frontline teams through LEGO® Serious Play®. *Tourism Management Perspectives*, *35*, 100692. https://doi.org/10.1016/j.tmp.2020.100692.

Somech, A. and Drach-Zahavry (2013). Translating team creativity to innovation implementation: the role of team composition and climate for innovation. *Journal of Management*, 39(3), 684 – 708.

Taylor, A. B., MacKinnon, D. P., & Tein, J.-Y. (2008). Tests of the three-path mediated effect. *Organizational Research Methods, 11*(2), 241-269.

Van Knippenberg, D. & Van Ginkel, W. P. (2021). Diversity Mindset Perspective on Inclusive Leadership. *Group & Organization Management, 0*(0) 1–19; DOI: 10. 1177/1059601121997229.

Van Knippenberg, D., De Dreu, C. K. W., and Homan, A. C. (2004). Work Group Diversity and Group Performance: An Integrative Model and Research Agenda. *Journal of Applied Psychology, 89* (6), 1008 – 1022.

Wang, X. H., Kim, T. Y. & Lee, D. R. (2016). Cognitive diversity and team creativity: Effects of team intrinsic motivation and transformational leadership. *Journal of Business Research, 69*, 3231–3239.

Won, A. S., Bailenson, J. N., Stathatos, S. C., and Dai, W. (2014). Automatically Detected Nonverbal Behavior Predicts Creativity in Collaborating Dyads. *Journal of Nonverbal Behavior*, 38: 389 – 408.

World Economic Forum (2020). *The Future of Jobs, Employment, Skills and Workforce Strategy for the Fourth Industrial Revolution*. Research report World Economic Forum.

Yang, J., Lee, H. W., Zheng, X. & Johnson, R. E. (2021). What Does it Take for Voice Opportunity to Lead to Creative Performance? Supervisor Listening as a Boundary Condition. *Journal of Business and Psycho-logy, 36*,1137–1150, doi. org/10. 1007/s10869-020-09726-z.

Yeo, R.K. (2020). Crossing Knowledge Boundaries: From Team Learning to Knowledge Teams. *Small Group Research, 51*(6), 700-737.

Zainuddin,Z., Kai Wah Chua, S., Shujahata, M., and Pererab, C.J. (2020).The impact of gamification on learning and instruction: A systematic review of empirical evidence. *Educational Research review, 30*, 100326, https://doi.org/10.1016/j.edurev.2020.100326.

Zenk, L., Primus, D.J., & Sonnenburg, S. (2021). Alone but together: flow experience and its impact on creative output in LEGO® SERIOUS PLAY®. *European Journal of Innovation Management,* 1460-1060, DOI 10.1108/EJIM-09-2020-0362

Zhang, X., & Bartol, K. M. (2010). The influence of creative process engagement on employee creative performance and overall job performance: A curvilinear assessment. *Journal of Applied Psychology, 95*, 862–873.