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Original Paper

The Theory of Flow: An Overview of Flow Research and Impact

Lina Wong[1]

[1] Department of Education, Eastern New Mexico University, USA

The Theory of Flow: An Overview of Flow Research and Its Impact on Work

The purpose of this paper is to provide a review of the literature on Csikzentmihalyi's theory of "flow." Its goal is to evaluate various articles encompassing an overview of flow attributes, ways to measure it, and its impact. The paper will investigate flow's effect on individuals, working people, and nurses. Flow is a beneficial state that has a precise definition. It merits introduction to students and others as a desirable condition to be attained throughout life. This paper is open to other points of view and to detractors of flow theory. It reviews articles that refer to Csikzentmihalyi and to other articles which interview him or one of his mentors. An experience of flow is evidence of improved quality of life.

Neurological Origins of Flow and Ongoing Flow Research

The Research

Frontiers in Psychology, an open access journal with authors from around the world, published "How to Measure Psychological Flow? A Neuroscience Perspective." Cheron (2016) investigated neurogenic effects, as it was already established that chronic stress impinged flow.

Researchers tested the brain during sports (Cheron, 2016). Professional handball players and ballet dancers made neuroplastic adaptations in their gray matter and in corticospinal paths in the foot and hand areas, respectively, a sport-specific dependency. Researchers quantified muscle-metric function, capturing electromyographic signals associated with psychological judgments applicable to flow. Fluent, efficient sensorimotor behavior was determined by feedback, impedance, and prediction. Flow experience occurred simultaneously, or in line, with movement, independent of action completion and before the final success or failure of the action.

Gaps in flow research center around theta oscillations modified by dopamine in the functional synchronization of the hippocampus and frontal cortex during flow signature (Cheron, 2016). Beta oscillation, event-related synchronization, and event-related desynchronization facilitate the emergence of flow. Performance of a skilled movement showed that synchronization of neural oscillations occurred. Flow emergence occurred with a highly specific cortico-cortical long-range synchrony. This article's neurologic descriptions were weighty, but clarified that flow could be generated by skilled muscle movement in athletic performance.

In research with music performance, certain mental attitudes, such as emotional commitment, stage presence, expressiveness, and creativity, were required for flow emergence (Cheron, 2016). Neurofeedback training of the sensorimotor rhythm in a virtual reality setting increased the Flow State Scale score in the variable for sense of control.

Characterization of the flow state benefited from the development of psychometric and neuro-metric approaches (Cheron, 2016). Researchers developed new experimental paradigms on specific athletic, artistic, and occupational behaviors during flow. A neurophysiologic signature of optimal sensation could increase the benefit of athletic-type training procedures.

Reflections on the Article

The underpinnings of flow reside in the human neurophysiology. The way researchers looked for flow connections by comparing handball players' hand movements and ballet dancers' foot movements during flow experience was brilliant. The disciplines of neurology and physiology must be utilized in

flow research, which likely would shed light on brain mechanisms during exercise. For instance, could certain intense athletic movements result in a flow experience that provides relief from depression?

Concepts and Operations: Failure to Pin Flow Down

The Research

Frontiers in Psychology also published Abuhamdeh (2020), "Investigating the 'Flow' Experience: Key Conceptual and Operational Issues," a concept analysis of Csikzentmuhalyi's theory of flow. The inconsistent manner in which flow is operationalized impedes its research. Three types of operationalization were distilled from 42 studies. Some studies found flow as continuous, others as discrete. Some thought it was enjoyable (autotelic) and others not. Another study documented flow as dependent on its antecedent task characteristics or, conversely, distinct from them. The author proposed that flow be operationalized (identified and repeatable) as discrete, highly enjoyable (optimal consciousness), and distinguished from enacting conditions.

Csikszentmihalyi's flow, though more systematic and empirical, connects to Maslow's peak experience (Abuhamdeh, 2020). Its predictors and consequences are essentially unchanged in the 50 years since he developed the theory. Very little is known about flow's latent structure, its components' causal relationships, and their relative contributions to the experience. Some even disagree about the definition of flow and, consequently, how to measure it. To measure flow, researchers must engage its central concepts. Even so, most studies defined flow differently. Flow should be distinctly conceptualized to generate consistent research.

Csikszentmihalyi's Flow Questionnaire operationalized flow as discrete, yet research has mostly labeled flow experience as continuous (Abuhamdeh, 2020). New concepts of flow sprang from the original due to the difficulty in capturing the experience for research. Skilled participants were more likely to generate it, but it is impeded during performance anxiety. Flow along a continuum was simply easier to research. The intensity level built into the flow construct is different from the actual task involvement. Absorption is required for optimal experience, but no clear border exists between ideal intensity that generates flow and so-called lower levels of it.

Csikszentmihalyi envisioned flow as enjoyable, with positive implications for intrinsic motivation, but this enjoyment state has not been operationalized (Abuhamdeh, 2020). Seligman (a close colleague of Csikzentmihalyi) viewed flow as devoid of emotion, which then influenced research. But tasks contributing to flow do not prevent its emotions, despite the fact that flow relies on the absence of self-awareness. Many non-human creatures feel emotion without having a sense of self. Csikszentmihalyi's occasional use of the word pleasure, meaning satisfaction of biological needs, is distinct from optimal experience, which led to the misinterpretation of flow.

Csikszentmihalyi originally distinguished flow's conditions from the experience of it (Abuhamdeh, 2020). Flow had to be elicited and then generated, two separate actions. More recently, Csikszentmihalyi again differentiated the conditions. Though cause and effect are in the model, researchers have not isolated them. One of the studies, which used a ten-item Core Flow Scale, did not conflate conditions and experience, which would help the theory move forward.

The lack of a border for flow and associated sub-optimal experience have hampered flow research (Abuhamdeh, 2020). Its boundaries are nebulous and are recommended to be set by quality, not degree. Clear goals, immediate feedback, and optimal challenge are its antecedents, but also deep attentional involvement and intrinsic motivation. These attributes spur the participant to continue despite fatigue or other detractors. Without standard operations, flow theory has been perceived to be on shaky grounds (Abuhamdeh, 2020). The only valid conceptualization and research path is to identify flow as a discrete optimal experience.

Reflections on the Article

In order for flow to continue to be seen as valid, research must find support for its concepts. For those to gain support, researchers must use the same assumptions. Flow has devolved into lax definitions which should be refuted, in order to open it to explicit research.

Avenues for Neuroscience in Study of Flow

The Research

The international open-access journal Behavioral Sciences publishes psychology, neuroscience, cognitive science, and behavioral biology. Gold et al. (2020) looked at the role of neuroscience in flow states. Current research focuses on flow's environmental, cognitive and neurocognitive influences, but inner workings and routes of initiation are largely unresearched.

Complex skills that simultaneously increase with complex tasks will induce flow and generate discovery (Gold et al., 2020). A progressively complex task will build motivation. The participant in control accesses the flow experience and encounters a state of equilibrium. Csikzentmihalyi's flow model described the flow state in terms of a wheel, in which flow was achieved by challenge and skill in fine balance. It occurred when it was distanced from worry, anxiety, apathy, and boredom and was influenced by relaxation, arousal and, especially, control.

Clear goals and quick, unambiguous feedback with no attention to spare encompasses flow criteria (Gold et al., 2020). Control over the activity, a sense of time distortion, the loss of self-awareness and problem-awareness, and a feeling of transcendence and unity with the activity are all produced in a flow experience. A focused space, immersion, an inspired sense of control, and the removal of self-consciousness contribute to flow and are necessary for it to occur.

Components of flow were further derived in 1990 by Csikzentmihalyi (Gold, 2020). They consisted of clear, attainable goals, high concentration on a limited field of attention, loss of self-consciousness in the merging of action and awareness, distorted sense of time, readily apparent feedback during activity, skill and challenge levels between easy and difficult, sense of personal control, intrinsic rewards gained during effortless action, and narrowly-focused absorption.

The critical demands of the activity precipitating flow, the activity's perceived importance, and the activity task role influenced entrance into a flow state (Gold, 2020). This positively impacted participants for its intense concentration, task efficiency, creativity, playfulness, learning efficiency, improved skills, elevated self-control, and positive encounter.

The measurement of flow poses a challenge (Gold, 2020). Introspection is a research measurement, but flow necessitates loss of self-awareness and so is incompatible with it. Some scales measure flow as continuous, yet memory at the end of the flow experience, its so-called recency, may influence that introspection. Researchers have striven to measure flow through the expression of psychological phenomena on bodily processes, but research questions may be ill-defined because of mixed physiologic results and the use of many different methods.

Neurocognitive mechanisms in the brain have generated models for flow (Gold et al., 2020). The transient hypo-frontality hypothesis by Dietrich and the synchronization theory of flow by Weber and Tamborini, which dispute each other, have been used as models. Other mechanisms are the explicit buffering system and the implicit system of consciousness and no conscious awareness. Dopamine has a role in the pleasurable experience and induction of flow.

The need for participant self-reflection grates against flow activity, even while its operations are studied (Gold, 2020). But neurocognitive function has opened up avenues for exploration. Influences on flow include dissociation during task absorption, resultant positive effects, and motivation. New directions for flow study include facilitation through transcranial direct current stimulation, hypnosis, the basal ganglia, and shift inactivity in brain hemispheres.

Reflections on the Article

The neuroscientific aspects of flow research are complex and intimidating. The measurement instrument of introspection and self-reflection show the difficulty of applying this tool to flow research. Participants would have to reflect after the experience rather than within it, because such an activity would break up the flow episode. Possible educational benefits of flow during academic pursuits would be ideas for valuable and practical research.

Challenges and Skills Part of Flow Concepts called into Question

The Research

Social Indicators Research is an international and interdisciplinary journal for quality-of-life measurement. Lovoll and Vitterso (2014) studied whether the balance of challenges and skills in flow is not important, even boring, which would be a critique of a hypothesis of flow theory. They contested attributes of flow are harmonized, claiming that flow has been defined too precisely. Csikzentmihalyi and others stated that challenges and skills should be in 50/50 balance, with an imbalance of 60/40 resulting in stress. Other researchers claim skills and challenges both must be at a sufficiently high level to ignite flow.

There appears to be no golden ratio, because flow subjectively produces merged action and awareness, a sense of control, and an altered sense of time (Lovoll & VItterso). Its autotelic nature has a purpose in and of itself. Therefore, flow's goals must be those of clear, immediate feedback. Some balance between perceived challenges and perceived skills must take place. Csikzentmihalyi's challenges and skills were at the phenomenological level and intrinsically rewarding, though in an early study, he and his associates found little variance in happiness accounted for by balanced challenges and skills.

Challenges affect daily life experience, but skills affirm self-identity (Lovoll & Vitterso, 2014). The study found that challenges and skills were not important predictors of subjective experiences. Even when balanced, their causal impact on flow was questionable. In fact, they found a slight imbalance produced the highest level of experiential well-being, a novel finding.

Young Norwegians went on a physical winter challenge in two groups and reported their impressions according to the Flow State Scale (Lovoll & Vitterso, 2014). Enthusiasm, interest, sadness, and fear were some of the variables. Results gave no support for the assumption that challenges and skills were important for flow experiences, nor were they predictors of those experiences. Neither challenges and skills nor their interactions were able to explain flow for the first hypothesis. For the second hypothesis, an imbalance actually predicted flow experience.

Disequilibrium, or imbalance, is a feeling state critical for association with flow (Lovoll & Vitterso, 2020). Imbalance was the key to exhibiting a flow state. The challenge-to-skills ratio was not a powerful predictor of subjective experiences and any balance between them was not found to be valid. Interest, engagement, and enthusiasm, however, were related to challenge in one hypothesis. These results went against original flow theory. Challenges and skills were not important determinants and might have even produced boredom and disinterest. Instead, slight imbalance was linked positively to flow. More investigation is needed for this part of the theory.

Reflections on the Article

This discovery, which showed that to effect a flow experience, challenges should be slightly higher than skills, was a crucial one and an implication for education, including nursing education. The idea that challenges should be slightly above perceived ability makes sense with an enthusiastic learner. With a reluctant learner, this might be off-putting, but instructors could work with students to see challenge as beneficial and possibility of failure as low or non-existent.

Interview with Csikzentmihalyi by Educational Studies Professor at ENMU

The Interview

In an interview, Csikzentmihalyi discussed flow as intrinsically rewarding, yet people often think of flow as the achievement of personal best (Shaughnessy, n.d.). The flow experience of highly creative people was usually complex. When people reported flow in work, it proved their perseverance; however, it was not usually perceived as intrinsically rewarding.

Csikentmihalyi found it useless to look for independent variables to find who creative people were (Shaughnessy, n.d.). Mentors could be dispensed with, because creative people were solitary while at the same time highly interactive. In other words, they learned from everyone and peers, spouses, and students were very important to them.

Concerning education and the development of children, Csikzentmihalyi has written about talented children (Shaughnessy, n.d.). Concerning psychology, he felt the concept of attention and psychic energy would be a fundamental future plank of psychology science.

Csikzentmihalyi stated that moods and daily function have a circular causality (Shaughnessy, n.d.). The quality of the experience was the bottom line for a person's individual perceptions of life. Humans were motivated by two constraints: to save psychic energy and to expend it to master new challenges. Individual development depends indirectly on the former and directly on the latter. A creative personality was developed by the person himself and was complex and dialectic (a Socratic method of eliciting truth.) Creatives were intensely introverted and extraverted, had masculine and feminine qualities, and were intuitive and rational.

Leading figures who stimulated and put Czikzentmihaly at ease were Howard Gardner (theory of multiple intelligences), David Feldman (theory of hope), Howard Gruber (creativity research), Dean Keith Simonton (intelligence, creativity, greatness), Teresa Amabile (creativity, productivity), and Vera John-Steiner (creativity, human interactions.) (Shaughnessy, n.d.)

Reflections on the Interview

There was something believable and inspiring about this interview. The interviewee was at ease and trusted the interviewer. That creative people were solitary came as a surprise. That mentors could be dispensed with added humor and lightness to the interview. What Csikzentmihalyi was likely referring to were mentors who did so for their own benefit. The effect of mentorship on generating creativity could be an area of research.

That moods were circular was also revelatory. Humans must be in balance, saving and expending energy. This has implications for handling stress in everyday life. Csikzentmihalyi's opinion that cherished associates were those who both stimulated others and set them at ease implies that it is important for people to carefully consider who will have a place in their lives.

Another Interview with Csikzentmihalyi

The Interview

The Roeper Review, founded by George and Annemarie Roeper in 1978, publishes scholarly articles that explore practice, policy, applied research, and theory in all aspects of gifted education and creativity through an interdisciplinary and humanistic lens. Henshon (2019) reflected on the flow experience with Csikzentmihalyi, who taught sociology and anthropology at the beginning of his career. Paradoxically, in this unfamiliar milieu he developed his basic model for flow. His career spanned five decades and eventually led him to the psychologist Martin Seligman, whom he met serendipitously on a beach in Mexico. They subsequently worked together on positive psychology until Csikzentmihalyi's recent death.

Csikzentmihalyi believed creativity was part of evolution; new ideas, objects, and lifestyles often cropped up by chance and led to adoption due to their novelty (Henshon, 2019). Creativity required a pre-existing cultural environment, the environment being part of Csikzentmihalyi's systems model, and this allowed for flow implementation. He paid attention to his experiences, both those that left him drained and exhausted and those that were rewarding. Human nature being fundamentally similar, the differences were in the sociocultural variation.

Csikzentmihalyi worked equally at three tasks: teaching and supporting doctoral students; working at and writing up research results from his own and students' work; and working with colleagues around the world on scientific and political problems (Henshon, 2019). He stated that much, if not most, of his work was frustrating and fruitless. His influences included Karl Jung, Abraham Maslow, Donald Campbell, thesis advisor Jacob Getzels, graduate advisor Bernice Neugarten, and others who also were genuinely intrigued by trying to understand human nature.

Reflections on the Interview

As with the previous interview, this article engendered a closer appreciation of Csikzentmihalyi. Many areas of his life were instructive; for instance, he developed flow while working on something

completely different. His experiences spark questions. Would he have gotten the idea of flow if he worked in his own discipline? Should persons invest time and energy in one area while being drawn to another? What cognitive paths lead to theories? How do unfamiliar environments spark thought? The particular environment and its influence on creativity hold implications for education. Further, Csikzentmihalyi was unafraid to face and consider his negative experiences, which ultimately lead to positive discoveries.

Mentorship, perhaps better called affinity, was discussed in this interview. In Csikzentmihalyi's own world, he was drawn to certain figures who had like interests and goals. He had to have met far more people than these in his seeking of those kindred spirits.

The Cognitive Engine of Flow

The Research

Europe's Journal of Psychology publishes scientific psychology from original studies, research, critical contributions, interviews, and book reviews and is written by and intended for psychologists worldwide. Simlesa et al. (2018) traced flow's mechanisms, which are engineered by cognitive processes.

The domains of flow share the same characteristics as many human activities, with social, work-related, and recreational effects (Simlesa et al., 2018). Csikzentmihalyi described flow as highly enjoyable, emanating from an ordered mind, balanced between challenges and skills, containing clear proximal goals, incorporating immediate feedback, leading to intrinsic motivation, and holding a hyper-focus; it also included a temporary loss of reflective self-awareness, a distortion of time-perception, a feeling of control, and a merging action and awareness during the activity. In addition, the authors describe flow as attentional-involving.

Researchers have grouped flow characteristics under broader concepts, such as the requirements to attain it. These are challenge-skill balance, clear goals, control, and feedback, and its outcomes, such as loss of self-consciousness, time distortion, concentration, and merging action-awareness (Simlesa et al., 2018). Csikzentmihalyi differentiated these into conditions: clear goals, skills-challenge balance, immediate feedback; characteristics: concentration, merging action and awareness, loss of self-consciousness, control, time distortion, and autotelic experience; and outcomes: persistence commitment, achievement, and less anxiety. The authors explained concepts as experiences arising from favorable contextual factors, known as preconditions, and the activation of specific cognitive functions such as attention and motivation. Naming, depicting, noticing, and recognizing flow had already been described.

Flow has inputs, processes, and outputs much like an engine (Simlesa et al., 2018). Skill-challenge balance, clear proximal goals and immediate feedback are cognitive, attentional and motivational inputs. Subjective absorption, task achievements, which are the fruits of effort, and positive affect are all outputs. The outputs cycle back to foster growth in the inputs. Causal relationships occur between the elements of skill-challenge and goals-feedback, between skill-challenge and attention-automaticity, and between attention-automaticity and absorption-positive affect. Loops of interdependence occur between goals-feedback and executive attention, between intrinsic motivation and positive affect, and between intrinsic motivation and task achievement.

A very slight imbalance between challenge and skill was found to be critical (Simlesa et al., 2018). The proximal goals of flow arose during the actual activity. Sustained or directed attention did not correspond with flow, but was the effortless attention characteristic of it generally. Automatic (implicit) attention and executive (explicit) attention were other flow categories. Flow corresponded with hypo-frontality as the temporary suppression of analytical and other capacities of the explicit system took place. Executive attention maintained flow when challenges were readjusted, but then reverted to hypo-frontality to continue flow. Flow involved the doer's determination to continue investment in the experience, which was as conducive to creativity as it was intrinsically motivated. Within the flow experience, known as its channel, there were multiple points of dis-balance in the skills and challenges continuum.

When people report flow, they feel active, alert, concentration, happy, satisfied, and creative, though they do not necessarily feel more cheerful or sociable (Simlesa et al., 2018). Csikzentmihalyi and Seligman describe pleasure as homeostatic but enjoyment as beyond that. Sense of control is paramount in flow. Though it has been tied to mindfulness, flow is not that state. Mindfulness is a high attentional, high focus state in the present moment, but flow has a narrow attentional scope, though with a high focus on the present. Mindfulness necessitated maximum openness, while flow required a narrow focus leading to a lack of self-consciousness. Mindfulness was not considered an output of flow and in fact was incompatible with it.

Flow is correlated with creativity and is implicitly a concept of positive psychology and an esoteric discipline (Simlesa et al., 2018). The authors want its integration into mainstream cognitive psychology and research to look for its connections to major cognitive functions.

Reflection on the Article

This article supported a previous one that found challenges and skills to be slightly imbalanced. Csikzentmihalyi defined flow concepts and these should be used in research. Flow is not an on-going experience but an experience at one point in time. The neurocognitive process of the brain adjusts to the flow experience and moves it along. Flow is clearly defined and should not be devolved to conditions-du-jour such as mindfulness, pleasure, or getting an endorphin high. Boredom alongside the flow-channel depicted by Simlesa et al. is an undesirable stopping point away from the trajectory. Educators should not be afraid to introduce challenge to students.

Flow in Nurses at Work

The Research

The Archives of Nursing Practice and Care is an international, open access, peer-reviewed journal concerned with nursing care of people, families, and communities and publishing novel updated research. Burke et al. (2016) found, in an exploratory study, that flow was significantly responsible for variance in work outcomes. Previous research has focused on negative psychological states, pathology, and illness. Current organizational research focuses on flow, resilience, meaning, engagement, thriving, and excellence.

Most work does not produce the eight conditions associated with flow (Burke et al., 2016). Athletes, hikers, dancers, actors, and musicians incorporated the conditions of flow that were positively correlated with positive effects and negatively correlated with negative effects. In one study, very positive effects were measured in Norwegian journalists who were older, located in large work units, had long employment histories, and earned more money. In other studies, certain job characteristics predicted flow and job performance in a reciprocal relationship. Intrinsic motivation, absorption at work, and enjoyment of work were found to be independent predicting factors of flow. Merging awareness and its application in certain types of jobs and tasks influenced the flow state. High skill and challenge were also found to be associated with positive mood, interest in the task, and performance.

Whether these attributes were really associated with a specific flow experience as defined by Csikzentmihalyi was unclear (Burke et al., 2016). But it was determined that flow was an actual phenomenon, existed in the workplace, and affected satisfaction, growth and performance. Individual traits and characteristics also affected flow, though there was no agreed-upon measure of it, a problem that has been seen in other studies in this paper.

Flow in the profession of nursing was specifically measured in this study (Burke et al. (2016). In Turkey nursing is in crisis, with fewer young people interested in doing it and many in the profession leaving the country for better pay and conditions. Burnout, depression, psychosomatic illness, absenteeism, and intent to leave are major problems in nursing that research has sought to understand. A framework of stressor-strain has been used to examine nurse experiences. The authors studied flow in Turkish nurses, hypothesizing that higher-scoring flow would indicate more favorable work outcomes and levels of psychological well-being.

Questionnaires were given to measure flow states in 224 nurses, a 37% response rate (Burke et al., 2016). A 36-item instrument measured nine dimensions of flow: challenge-skill balance,

action-awareness merging, clear goals, unambiguous feedback, concentration, sense of control, loss of self-consciousness, transformation, and autotelic experience. Work outcomes were also configured: job satisfaction, self-rated job performance, absenteeism, intent to quit, work engagement (vigor, dedication and absorption), burnout (exhaustion, cynicism, and efficacy) and psychological well-being (positive affect, negative affect, psychosomatic symptoms, medication use, and life satisfaction.)

Partial support was found for the general hypothesis (Burke et al., 2016). Nurses experiencing flow were found to be more efficacious and engaged. There was a weak relationship with psychological well-being, however, with flow failing to predict it. Flow was associated with some positive outcomes: positive emotions and other virtues; individual psychological and physical health; increases in personal, job, and organizational resources; and influences of colleagues through transference.

Csikzentmihalyi believed flow could be created in workplaces (Burke et al., 2016), although this may be contrary to his original emphasis. He believed leadership and teams could support flow; perhaps he meant indirectly. The authors discussed mindfulness as in increaser of flow, though in a previously mentioned study it clearly showed that mindfulness had nothing directly to do with flow experience. Through flow, learned industriousness and hope, offshoots of the flow experience, were increased but not inherent in it. Other researchers claimed magnet hospitals demonstrated flow by philosophies of caring and promoting good relationships between professionals including nurses, noble attributes, though flow is distinct from these.

The study participants were young, inexperienced and had low levels of education compared with other samples (Burke et al., 2016). Their complete representation in the study was not possible to determine. The questionnaire promoted response set tendencies and was taken at one point in time. Some if its internal consistency was deemed unreliable, which were limitations to the study. The authors recommended hope, self-esteem and gratitude as future research subjects, though these concepts are unrelated to the flow experience.

Reflections on the Article

This article further shows the need to clearly define the attributes of flow. On the other hand, there are many positive repercussions to flow which benefit the participant, other people, and systems. Research into flow can lead to discoveries. However, if flow is to be evidence-based, studies must support it specifically. Its case is similar to nursing and nursing's relationship to other disciplines. Research outside of nursing, such as the use of outside theories in nursing research, is valid for its results but does nothing to promote nursing as a distinct profession.

Relationship of Humor to Flow

The Research

Frontiers in Public Health is a multidisciplinary open-access journal disseminating scientific knowledge and discoveries to researchers, academics, clinicians, policy makers and the public worldwide. Bartzik et al. (2021) studied humor to see its effects on stress, flow experience, work enjoyment, and meaningfulness of work. Fewer German nurses were entering the workforce due to the physical and psychological strain. Those already in the workforce were getting older and had high rates of absenteeism and intents to terminate. The study evaluated the effectiveness of a humor intervention for nurses.

Humor as a construct is cognitive, emotional and interpersonal (Bartzik et al., 2021). It has a social context, a cognitive-perceptual process, and an emotional response. It also elicits vocal and behavioral expression. A sense of humor variously refers to a habit of humor, a way of coping, a world view, an attitude, an aesthetic response, a temperment, a pattern, and an ability. In this study, humor habits were defined as enjoyment, laughter, verbal, everyday life, laughing at self, and humor under stress. Humor elicits emotions which are incompatible with stress.

In the care context, humor is communication, a positive characteristic, and an aspect of interactions (Bartzik et al., 2021). It increases trust, forms cohesion with colleagues, deals with difficulties, and is part of patient interaction. It can reduce anxiety and give support. A complex nursing intervention, it requires creative energy and cognitive skills to accomplish. It should be individually tailored and done

with timing. A humor training program for nurses called Care for Joy was incorporated into the study. Humor training has been shown to increase sense of humor, self-efficacy, positive thinking, optimism, and happiness and to decrease negative thinking, depression, anxiety, and stress. Humor occurs in everyday life and is fostered by playfulness.

The researchers studied humor as a mediator on negative stress, increased work enjoyment, and the ability to increase perceived meaningfulness of work and positive subjective experiences (Bartzik et al., 2021). Another hypothesis of the study was to find if there was a direct relationship between humor and the flow experience as theorized by Csikzentmihalyi. For the flow portion of the study, the Flow Frequency Scale was used.

The flow experience was proposed in Hypothesis Four of the study (Bartzik et al., 2021). It confirmed that humor had a positive effect on the frequency of flow experiences, which was also concluded in other studies in which "fun" was a predictor of flow. Well-being and job satisfaction were therefore positively influenced by the experience. The study strongly pertained to nursing, as participants were nurse trainees. Humor could be considered an intervention to promote qualities among nurses at work, including frequent flow experiences. The authors proposed the concept of flow could be used in a stress-relevant situation for re-interpretation as a pleasant challenge. Humor could be the catalyst converting stress into flow, a positive change.

Reflections on the Article

There were many hypotheses in the study, a fascinating reading. The humor training program would be energizing for nurses. Playfulness being a strong attribute of humor would carry over to the generation of flow experience, in which a sense of self-awareness must be lost.

Two Interviews with Gardner, Mentor and Colleague of Csikzentmihalyi

The Interviews

According to Seever and Shaughnessy (2003), good work is excellence in quality and social responsibility leading to constructive ends. In the development of individuals throughout history, mentors have personified good work. This is needed today in every niche of society. William Glasser, author of "The Quality School and the Quality School Teacher," found that "ideas with wings" are rarely in the forefront today. Mantras such as "back to basics" and "standards movements" have not been an example of strong educational principles. Therefore, excellence and ethics should not be sacrificed to expediency and profit in education.

A diverse population has made it more challenging to do good work in the area of education. Though technology is morally neutral, distance learning requires a prepared audience and a live mentor, at least part of the time. The current state of distance learning (Seever & Shaughnessy, 2003) thus entails risks.

Good work encompasses locating the self in the professional mission, recognizing role models and understanding why they are chosen, and regular self-evaluation (the mirror test) (Seever & Shaughnessy, 2003). Only with these three--a strong sense of personal mission, standards, and integrity-- can people grasp and appreciate their own good work.

It is vital for the worker to know his work (the heart of his profession) and to keep to that one central mission (Seevers & Shaughnessy, 2003). This may even come down to a risk of being fired if the values held by the person are shaken by the present circumstances. Teachers must be trained to enjoy working with pleasurable scientific materials, enchant students towards quality thinking, and instill in them the rational thinking that is necessary for science.

Csikzentmihalyi studied creativity with Gardner in a so-called amoral way, such that its traits could be used constructively or destructively (Seevers & Shaughnessy, 2003). Intelligent people must be highly yoked to a sense of responsibility. For this reason, teachers who have a high intelligence level should be paid comparatively to other professions. Otherwise, they will leave the profession out of necessity. Researchers can judge whether society is moving towards or away from idealism by looking at the teaching profession. The authors point out that geneticists are excited to do their actual work, that is to say, good work, but few are concerned with the ethical implications of their work. As such, society,

parents, nurses, teachers, and all others must be the guardians and gatekeepers of education.

In Siegel and Shaughnessy (1994), Howard Gardner narrates how students lack an understanding of the knowledge they are taught. Students should carry out projects which take time and which they fashion themselves. Such projects draw attention to the work itself and provide the opportunity to demonstrate understanding.

Reflection on the Interviews

Csikzentmihalyi has said that others were important to his own work, naming Howard Gardner as a person he admired and liked to be around. Perhaps a better word than mentor for someone of the stature of Csikzentmihalyi would be fellow commiserator. These are the people who make others feel comfortable while, at the same time, free to say their thoughts and ideas. They can bounce ideas back and forth without personal judgment, but still have a professional opinion. In doing good work, flow experiences come into being to the extent that growth takes place, challenges are met, focus occurs, and a sense of time is lost. Flow brings good work to fruition, achieving an experience which augments the desire to repeat it, and do good work again.

The context of using knowledge in new situations relates to flow. Flow characteristics such as absorption and merging with activity, automaticity in steps, fluency, focus, challenges slightly greater than skills, and loss of self-awareness can transpire without effort during projects. The concept of education for understanding with a resultant flow experience has implications for nursing, such as the creation of meaningful learning. Therefore, flow could be said to grow in the fertile ground of the education-for-understanding milieu of Gardner.

Conclusion

The experience of flow is ripe for research. Yet some researchers have not confined themselves to its specific concepts. Others have sought to understand flow in light of work performance, which shows benefits to individuals and society. Flow is deeply connected to neuroscience and should be studied by those who have that capability. It can also be studied from a more humanistic basis. Flow is not an end in itself but the result of factors that enhance an experience positively. Some of the attributes of flow require effort and the suspension of time. This can result in fatigue, making for discomfort. Yet the drive to achieve flow disregards these sensations. Flow yields a sense of achievement that brings with it the determination to repeat it. It should be studied in light of enhancing education, as flow is evidence of accomplishment. It builds intrinsic motivation, a highly desirable, though elusive, educational goal.

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