Mindfulness in Adolescents: How is the Mindfulness of IJSO Participants?

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Abstract
Mindfulness is a necessary psychological state for adolescents. Mindfulness is essential in improving mental health and psychological well-being and can help adolescents optimize their learning process or cognitive and academic performance as students. The study aimed to obtain empirical data on mindfulness tendencies in adolescent candidates for International Junior Science Olympiad (IJSO) participants. The research method used is a mixed method with a convergent parallel design. The research sample was 12 adolescents who were candidates for the IJSO or International Junior Science Olympiad in 2022. The study results showed that the tendency of mindfulness in adolescent IJSO candidate participants was mainly in the high mindfulness category, and when reviewed based on the analysis of mindfulness aspects, behavioral indicators or characteristics of mindfulness tendencies in each IJSO candidate participant were quite diverse.

1. Introduction

Along with the times and significant advances in technology and communication, the modern world is currently transforming and presents various opportunities in various choices, open lessons, and information advances in the world (Kamal et al., 2019; Melnyk et al., 2019; Tavares et al., 2022). However, these technological and communication advances also turn out to present unfavorable opportunities and make the situation more complex (Carson & Langer, 2006; Rahmawati et al., 2021). One of the unfavorable opportunities that occur to individuals is the demands of much work, which makes individuals increasingly required always to be busy (Soetardji, 2019). These businesses cause them to get stuck in routines or habits that make them live fixated on targets, complex tasks, or routines (Smallwood & Schooler, 2006; Valdez et al., 2015). Individuals often become unfocused on the situation that is happening, reduce attention to the activities that are being carried out, and often become autopilot in carrying out each activity. So, they tend to do every activity automatically without involving awareness and mindfulness.

In Latin, the term mindfulness is called *pleine conscience, consciencia plena*, which translates to "full consciousness" in English (Brazier, 2016). Simply put, mindfulness is moment-to-moment awareness, and the essence of mindfulness is paying attention intentionally (Kabat-Zinn, 1990). Mindfulness is a flexible state of mind where individuals are actively engaged in the present, attentive to novelty, and sensitive to context (Langer, 2000). Being mindful means that individuals are aware of whatever their current state is (be it related to thoughts, feelings, sensations, or the environment that changes over time), regardless of past and future events, without judging, assessing, or avoiding situations beyond their control (Bishop et al., 2004; Mace, 2008; Rosini et al., 2017).

Most individuals think they are mindful, but in reality, individuals spend more time "not there" than they know, and they tend to be less and less in a mindful state (Langer, 2000; Suelmann et al., 2018). This state is called mindlessness (Brown & Ryan, 2003). Mindlessness is when attention is not directed, awareness is severely decreased, and individuals react automatically without attention to anything happening. Thus, during mindlessness, individuals can perform activities that are sometimes quite complex over a long time (even if they are used to it, it has become their default mode of daily life). However, the activities are performed without being conscious and lived, and they only behave mechanically, and they will act like robots that have been programmed to act (Langer, 2000).

Mindlessness is closely related to the autopilot phenomenon that individuals currently use to speed up their activities. This autopilot phenomenon usually occurs when individuals face various problems automatically, using their usual responses without realizing or appreciating them. Thus, the general work becomes more quickly completed, but the quality and how much appreciation could be better. These phenomena show that individuals today tend to be more mindless than mindful (Arif, 2016), which will put an unhealthy

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burden on the physical and mental. Thus, mindlessness is not just a psychological disorder but a feature of contemporary life (O'Donnell, 2015).

The opposite condition to this and provides many benefits for individuals is mindfulness. Mindfulness can help individuals get out of or eliminate automatic behavioral patterns and be more aware of responding to things more productively (Marotta, 2013). Mindfulness is a healthy awareness of thoughts, emotions, and experiences that can be applied to everyday situations to live a rich and enjoyable life (Warren, 2020), it can facilitate the balance or personal well-being of each individual so that individuals can have stable well-being (unconditional happiness) (Brown, Ryan, & Creswell, 2007), and can help individuals understand that there are many perspectives to see any action, and it will help them realize that they have many choices from various perspectives on the behavior (Carson & Langer, 2006).Mindfulness is crucial for individuals to become happy human beings with adequate awareness and alertness in their actions and a good quality of life (Ahmadi, 2016; Ludwig & Kabat-Zinn, 2008; Ruff & Mackenzie, 2009).

In the last ten years, mindfulness has been widely researched. The results show that mindfulness can improve memory, creativity, attention, learning, psychological well-being, reduce stress and negative affect, correlate with self-acceptance, resolve and overcome various psychological problems, support the achievement of individual academic potential, help improve student focus during class, help students become more successful learners and potentially benefit academically and personally (Ahmad & Suyuthi, 2019; Bennet & Dorjee, 2015; Bradshaw, 2019; Erbe & Lohrmann, 2015; Hidayat & Fourianalistyawati, 2017; Leland, 2015; Mrazek et al., 2019; Rohman, 2022; Wenzel et al., 2015).

Based on some of these research results, although mindfulness provides many benefits, especially in improving various aspects, research that thoroughly explains the level or tendency of mindfulness precisely and mindfulness research on gifted adolescents is more limited in the scientific literature. This is evidenced by the results of a bibliometric analysis conducted using the Vosviewer application on 436 articles with the keyword mindfulness published from 2000 to 2023, that “tendency” and “gifted adolescence” have a small circle size and a greater distance from the center of the network. This could mean that “tendency” and “gifted adolescence” are topics that rarely appear/are discussed with mindfulness; in other words, few researchers still examine the research. Therefore, the frequency of these keywords is also tiny in the scientific literature. Thus, to fill the research gap, the researcher analyzes mindfulness tendencies in gifted adolescents, especially in candidates for the 2022 International Junior Science Olympiad (IJSO).

The International Junior Science Olympiad (IJSO) is an annual educational competition on an international scale in the field of sciences, which includes biology, chemistry, and physics, for Junior High School or Madrasah Tsanawiyah students aged fifteen years and under in the year of competition. Usually, IJSO is participated by various countries worldwide, including Indonesia. In Indonesia, IJSO is one of the competitions facilitated by the Pusat Prestasi Nasional (Puspresnas), and usually, IJSO is a vehicle for sustainable development of the national science Olympiad that has been carried out (ALLEN Overseas, 2023; IJSO, 2019; IJSO, 2023; Magazine, 2016; Yunita, 2014). To become one of the candidates for IJSO, adolescents must participate and pass various stages of competition selection, starting from the national science Olympiad at the district/city level, provincial level, and national level. Then, after they participate in the national science Olympiad at the national level, they will also compete again in the selection to become candidates for IJSO participants.

In 2022, at the initial selection of IJSO, 94 students from 24 different provinces competed in the national selection to become one of the candidates for IJSO. Then, in the following selection, only 40 students passed, and in the end, only 12 students qualified to become candidates for IJSO participants. The participants who passed were adolescents who had won gold, silver, and bronze medals in the national science Olympiad at the national level in the field of science. After becoming candidates, the 12 students then participated in coaching activities or training centers as a further effort to improve their abilities in mastering material and practice, as well as in preparation for participation in the upcoming IJSO competition.

The coaching activities were carried out intensively for two consecutive months, with several activities ranging from theoretical coaching with lecturers from leading universities to learning assistance with tutors. So that they can learn from the experts directly, and usually, the material they learn is no longer the subject matter according to their level of education. In addition, during the coaching stage, they will also face a series of initial, daily, and final tests in the form of multiple-choice questions, short form, and essays. The series of tests are conducted to monitor their overall development or learning process and a form of selection. The selection was carried out to select 12 IJSO candidates to become 6 IJSO participants who will represent the Indonesian team in the IJSO competency event at the international level.

Some competitions and selections followed by adolescent IJSO candidates show that they often face and are in challenging, competitive, and tense situations, especially in the learning process or competition they go through. In addition, they are also prone to failure, which may cause disappointment and significantly affect their psychology. Considering these conditions, mindfulness is one of the most important and potential things

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for IJSO candidates, especially in supporting their learning and competition process. Therefore, exploring mindfulness tendencies in adolescent candidates for the International Junior Science Olympiad (IJSO) is essential.

2. Method

The research method used is a mixed method with the convergent parallel design (Creswell, 2012), where quantitative and qualitative data are collected simultaneously, analyzed separately, and then compared to gain a more comprehensive understanding. This method allows for data triangulation to increase the validity of the findings. In the context of this study, the main focus was to understand mindfulness tendencies in adolescents, specifically International Junior Science Olympiad (IJSO) participants. The use of this method in the research seeks to explore how mindfulness develops among science Olympiad participants, both in terms of quantitative measurements and qualitative insights gained from the subjective experiences of IJSO participants.

The research sample is all members of the population or adolescents who are candidates for the International Junior Science Olympiad (IJSO) Training Centre 1 in 2022 consisting of 12 people, with the following characteristics: (1) occupying grade 9, (2) average age 13-15 years, (3) have IQ scores above average, (4) have a deep interest in biology, chemistry, and physics subjects, (5) have fast learning ability, (6) competitive, ambitious, and independent in learning, (7) get championships in national science Olympiads at the district/city, provincial, and national levels, and (8) pass the selection to become a candidate for IJSO participants.

The data collected from this study are quantitative and qualitative. The quantitative data collection process uses an instrument of mindfulness tendencies in adolescents, namely the Kentucky Inventory of Mindfulness Skills (KIMS), adapted from Ruth A. Baer, Gregory T. Smith, and Kristin B. Allen (2004), which consists of 29 items. KIMS has good content validity, concurrent validity, and internal consistency (Brown & Ryan, 2003; Rohman, 2022). As for qualitative data collection, researchers used open-ended questions that did not have fixed answer options, so participants could answer freely based on their own experiences, thoughts, or opinions. The open-ended questions were developed based on the aspects of mindfulness that the researcher wanted to investigate further, including observing, describing, acting with awareness, and accepting without judgment. The quantitative and qualitative data collection was distributed online through online form filling (Google Forms). In addition, the data collection process was also carried out simultaneously during the training center period. Triangulation was conducted by comparing quantitative and qualitative findings to evaluate the alignment between statistical data and participants' subjective experiences. This analysis is expected to provide a deeper understanding of the validity of mindfulness measurement in adolescents, especially International Junior Science Olympiad (IJSO) participants.

This research procedure is carried out in three stages. The first stage is research planning, which includes problem identification, a literature study of the phenomenon under study, bibliometric analysis to identify existing research gaps, preparation of research instruments, obtaining permission from related parties, and determining research samples consisting of 12 teenage candidates for International Junior Science Olympiad (IJSO) Training Center 1 in 2022. In the second stage, the simultaneous data collection stage, quantitative distribution was carried out by distributing instruments in questionnaires and qualitative data obtained through open questions, in an online form (Google Form) provided by the researcher. The collected data were then analyzed separately. Quantitative data was analyzed using descriptive statistical analysis techniques with the help of the IBM SPSS Statistics 22 application. Meanwhile, qualitative data was analyzed manually by going through the stages of organizing and transcribing data, coding data, describing descriptions, presenting data, interpreting findings, and validating the accuracy of findings (Creswell, 2012). In the third stage, data triangulation was carried out by comparing the results of quantitative and qualitative analysis to identify patterns of congruence or differences that emerged to obtain a more comprehensive understanding of the tendency of mindfulness in adolescents participating in IJSO.

3. Results and Discussion

The results showed that overall, the tendency of mindfulness in adolescents as much as 91.67% was in the high category, while the tendency of mindfulness in adolescents as much as 8.33% was in the low category. It can be interpreted that most adolescent candidates for IJSO have been able to observe their experiences, be it thoughts, feelings, or the environment around them (observing), able to describe their experiences in words (describing), able to act and carry out activities with full awareness so that they also tend to be more careful and vigilant to take action (acting with awareness), and able to accept the state of themselves and the experiences they experience without giving judgment (accepting without judgment). As for a small number of adolescent candidates participating in IJSO, they tend to pay less attention and focus on the activities they are doing, cannot express their thoughts and feelings in words, cannot describe their experiences, tend to judge their thoughts and feelings and judge their thoughts and feelings (for example: by labeling them good or bad). The findings of the tendency of mindfulness in adolescent candidates for IJSO are presented in Table 1.

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Table 1. Mindfulness Tendency of IJSO Candidates

No	Categories	Range	N	Percentage
1	Low	≤ 3	1	8.33%
2	High	> 3	11	91.67%
Amount			12	100%

A brief explanation of mindfulness tendencies in adolescent candidates for IJSO participants in terms of mindfulness aspects is outlined in Table 2.

Table 2. Mindfulness Tendency Based on Aspects

Aspects	Categories	Description
1. MAR		
Observing	High	Can pay attention to various stimuli in the environment, such as: being able to pay attention to their heartbeat which is faster when doing practice problems, often realizing if the conditions in the classroom are not conducive because too many people are making noise.
Describing	Low	It is difficult to find words to describe his experiences, so it also makes it difficult for him to express his ideas when asked for opinions, explain his heart, explain what he feels when he feels dizzy, or tell his experiences to others. As he said, "I can't find the words if I feel emotional".
Acting with awareness	High	Can act and do activities with full awareness shown by: when the learning process takes place he only focuses on the material explained by the lecturer, when discussing with friends he really enjoys it, if he is reading he sometimes focuses his attention on the book.
Accepting without judgment	High	Can accept any events and circumstances, without judgment or criticism, such as he tends not to conclude about himself for what he has done, if the experience (especially the test or competition) is not as expected he can try to stay calm and see the failure as "his path to success".
2. CR		
Observing	High	Can pay attention to stimuli in her environment, such as: she often notices if there is a smell around, the classroom atmosphere is not conducive because of the commotion caused by her friends, and she often notices if his mood starts to change.
Describing	High	Has the ability to describe her experience in words very well, such as: quickly finding words to describe feelings, being able to describe her feelings in words even when feeling upset, easily recounting her overall experience, and being able to mention or describe the difficulty of the questions after the test.
Acting with awareness	High	Can act and do activities with full awareness which is shown by the: when discussing with friends she enjoys it, if she is reading a book she sometimes focuses his attention on the book, does not easily daydream when chatting with others, and rarely does several activities at once.
Accepting without judgment	High	Having the ability to accept events and circumstances, without judgment or criticism, such as not categorizing her experiences (for example into memorable or unmemorable), not judging anything she thinks, and if the experience (especially the test or competition) is not as expected she can try to accept it without judging it.
3. NR		
Observing	High	Can pay attention to stimuli in the environment, such as: he often notices if there is a smell around, and he is always aware that his mood starts to change.
Describing	High	Has the ability to describe his experience in words well, such as: quickly finding words to describe feelings, easily expressing his hopes and heart, being able to describe his feelings in words even when feeling upset, easily telling his overall experience, and being able to mention or describe the location of the difficulty of the question after the test is carried out.
Acting with awareness	Low	Lack of ability to act and perform activities with full awareness, such as: often not realizing the answers he has said when asked spontaneously, easily daydreaming when chatting with friends, even he is also often not aware of what distracts or makes him unfocused, and often not hearing when being called by others. In addition, in everyday life, especially when studying, as he said, he often does activities without realizing it, "if something has been done often, it's like a reflex". His response is autopilot, where he just does things without really realizing it.
Accepting without judgment	Low	Less able to accept and often make judgments on events and circumstances that occur, such as: sometimes concluding about himself for the behavior he has done (e.g. he sometimes criticizes himself if he has different opinions from his friends, judges his thoughts with the label of bad thoughts, and self-deprecates himself if he gets angry for no reason).
4. GKAA		
Observing	High	Often able to notice stimuli in the environment, such as: he often notices if his mood starts to change, and often notices if the atmosphere in class is not conducive when the lecturer suddenly stops talking and his friends tend to talk about many different things.

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Aspects	Categories	Description
Describing	High	Has the ability to describe his experiences in words well, such as: quickly finding words to describe feelings, rarely struggling if asked to express his ideas, and can describe his feelings in words even when feeling upset. Furthermore, he was also able to identify and describe the difficulty of the questions after the test was carried out. As he said "because usually I can do the questions, but will stop at a certain point. That's where I know that the difficulty of the question is at that point".
Acting with awareness	High	Can act and do activities with full awareness as shown by: when studying, he only focuses on the material explained by the lecturer in class, focuses all his attention on the book if he is reading, does not easily daydream when doing activities (for example when chatting), and rarely does several activities at once.
Accepting without judgment	High	Having the ability to accept any events and circumstances, without judgment or criticism, such as: he does not label his thoughts as bad or good, and can accept experiences that occur even if they are unsuccessful. As he expressed "Accept the pain, you will rise from it. You are like a flower, maybe not now you will bloom, but there must be a time when you will rise, bloom, cover the others".
5. BAS		
Observing	High	Can pay attention to stimuli in his environment, such as: he often realizes if his mood begins to change which is also indicated by changes in the way of communicates and how he does certain activities, often realizes if there is a smell that appears around, and when the classroom atmosphere begins to be not conducive because the voices of friends or lecturers begin to rise during the learning process.
Describing	Low	He has difficulty finding words to describe his experience, so it also makes him often feel confused when asked to explain his heart, unable to explain what he feels when he feels dizzy, and expressing his feelings when he feels upset. In addition, he also often had difficulty in expressing his ideas when asked for opinions and sometimes he had difficulty in mentioning the difficulty of the questions after the test was carried out. As he said, "I had already thought about how bad my score was, so I didn't dare to know the answer to the question that I was hesitating about", his statement shows that his judgment of the test made it difficult for him to describe his experience, and his statement is also related to the aspect of accepting without judgement.
Acting with awareness	High	Can act and do activities with full awareness which is shown by: when he is studying he only focuses on the material explained by the lecturer in class, focuses all his attention on the book if he is reading, when he is discussing with his friends he enjoys the process, does not easily daydream when doing activities (for example when chatting), rarely does several activities at once. So overall as he expressed himself in everyday life, especially in learning "I more often do it deliberately (realize it), because if I don't realize it, then it's the same as I will daydream". His statement is similar to the concept of mindfulness, where mindfulness is a condition where individuals try to pay attention intentionally.
Accepting without judgment	Low	Less able to accept and often make judgments on events and circumstances that occur, such as: he sometimes reproaches himself when he gets angry without cause, criticizes himself when he disagrees with others, judges himself (such as: judging his thoughts with the label of bad thoughts), and categorizes his experiences and often deliberately forgets experiences that are not memorable.
6. AMH		
Observing	High	Often pays attention to stimuli in the environment, such as: he is always aware that his mood starts to change, often aware if there is a smell around, and is always aware if the atmosphere in the class is not conducive due to noise, for example, because many of his friends are expressing their opinions simultaneously.
Describing	High	Has the ability to describe his experiences in words well, such as: quickly finding words to describe his feelings, easily expressing his hopes, being able to describe his feelings in words even when feeling upset, and easily telling his overall experience. Furthermore, he was also able to mention or describe the location of the difficulty of the question after the test was carried out.
Acting with awareness	High	Can act and do activities with full awareness shown by: when studying and discussing with his friends he really feels the fun of doing these activities, when studying in class sometimes he also only focuses on the material delivered by the lecturer, and rarely does several activities at once.
Accepting without judgment	High	Having the ability to accept events and circumstances, without judgment or criticism, such as: tending to never criticize or reproach himself (for example if he gets angry for no reason, or if he disagrees with others), does not judge or label his thoughts as good or bad, and can accept experiences that occur even if they are unsuccessful. As he stated, "Unsuccess is something that encourages us to 'review' ourselves. Disappointment must come from not succeeding, but the motivation for myself is important to get rid of the disappointment".
7. KDP		
Observing	High	Can often notice stimuli in her environment, such as: often noticing her heart beating faster when doing practice problems, always noticing if her mood starts to change, as well as the changes that result from it. As she put it "an unusual nagging feeling, feeling sluggish and heavy (if the mood is negative), and feeling energized (if the mood is positive). In addition, she is often aware of the smell around her and is always aware if the atmosphere in the classroom is not conducive due to noise".

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Aspects	Categories	Description
Describing	High	Has the ability to describe her experiences in words well, such as: quickly finding words to describe feelings, easily expressing her hopes, not finding it difficult if asked to express her ideas, and being able to describe her feelings even if she is in a good condition (for example when she is dizzy, or even when she feels upset). This can happen because as she said "I am used to writing a diary so I am trained to express emotions through words". Furthermore, he was also able to identify and describe the difficulty of the question after the test was carried out, because of his curiosity about the question. It is similar to the concept of mindfulness that mindfulness is a condition that includes curiosity.
Acting with awareness	High	Can act and carry out activities with full awareness as shown by: when studying he only focuses on the material explained by the lecturer in class, focuses all his attention on the book if he is reading, when discussing with his friends he enjoys the process, does not easily daydream when doing activities (for example when chatting), even when he is asked spontaneously he often realizes what response or statement he makes. In addition, he also rarely does several activities at once so that as a whole as he expresses himself in everyday life, especially in learning, he is often aware of what actions he takes.
Accepting without judgment	High	Having the ability to accept any events and circumstances, without judgment or criticism, such as: tends not judging or labeling their thoughts as good or bad, and not criticizing themselves when they differ from others.
8. CF		
Observing	High	Often able to notice stimuli in her environment, such as: she often notices if her mood starts to change, as well as often noticing if there is a smell around and always noticing if the atmosphere in the classroom is not conducive.
Describing	High	She can describe her experience in words well, such as: being able to describe her feelings with words even when she feels upset, and easily telling his overall experience. Furthermore, she was also able to mention or describe the difficulty of the questions after the test was carried out.
Acting with awareness	High	Being able to act and carry out activities with full awareness is shown by: when studying she only focusing on the material explained by the lecturer in class, rarely daydreaming when chatting, and overall in her daily life, especially when studying during the training center she is aware of the activities he does. As he said the activities he does are often done "consciously. Because learning for OSN requires a plan".
Accepting without judgment	High	Having the ability to accept any events and circumstances, without judgment or criticism, such as: tends not judging or labeling their thoughts as good or bad, and not criticizing themselves when they differ from others.
9. GR		
Observing	High	Can often notice stimuli in his environment, such as: often noticing tense muscles and a faster heartbeat when doing practice problems, noticing if his mood starts to change. As he said, "Emotions are vivid, I am often aware of their presence". In addition, he also often realizes if the atmosphere in the classroom is not conducive because of the noise.
Describing	High	Has the ability to describe his experiences in words very well, such as: quickly finding words to describe feelings, easily expressing his hopes, and having no difficulty expressing ideas when asked for opinions. This can also happen, because as he said "I am expressive and what I am" so he has no difficulty in explaining the feelings or emotions he feels. In addition, he was also able to mention or describe the difficulty of the questions after the test was carried out.
Acting with awareness	High	Can act and do activities with full awareness shown by: when he is studying he only focuses on the material explained by the lecturer in class, focuses all his attention on the book if he is reading, when he is discussing with his friends he really enjoys the process, and when he is asked spontaneously he often realizes what responses or statements he makes. So overall as his expression is "I am often aware of what I do", he is often aware of what actions he takes.
Accepting without judgment	Low	Less able to accept and often make judgments on events and circumstances that occur, such as: he sometimes reproaches himself when he gets angry for no reason, criticizes himself when he disagrees with others, and makes judgments about himself (such as: judging his thoughts with the label of bad thoughts, feeling like a failure, and others). As she said, "I often feel like I can hold the world. But I also often feel like a failure and an outcast".
10. MS		
Observing	High	Often able to notice stimuli in her environment, such as: often noticing her heart beating faster when doing practice problems, noticing if her mood starts to change which also affects her behavior, often noticing if there is a smell that appears around her, and if the atmosphere in the classroom starts to be not conducive because there are many sounds.
Describing	High	She can describe her experiences in words well, such as: easily expressing her hopes, sometimes being able to find words to describe her feelings and ideas if asked for opinions, and sometimes being able to explain her heart and feelings in words even when feeling upset. Furthermore, she was also able to mention or describe the difficulty of the questions after the test was carried out.
Acting with awareness	Low	Less able to act and do activities with full awareness, such as: easily daydreaming when chatting with friends, easily distracted and unfocused due to various things, and often

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Aspects	Categories	Description
		not hearing if called by others. Furthermore, as she expressed that "if it is on a topic that I like, I often go through it unconsciously", this expression shows that she is often unconscious in carrying out activities or learning processes.
Accepting without judgment	Low	Less able to accept and often makes judgments on events and circumstances that occur, such as: she sometimes reproaches herself if she gets angry without cause, and she tends to make judgments about herself (such as: judging her thoughts with bad thought labels, comparing herself with others). As she said, "Yes, I often compare myself with others to judge myself".
11. KNW		
Observing	High	Can often pay attention to stimuli in their environment, such as: often noticing if their mood starts to change, as well as if there is a smell around and always noticing if the atmosphere in the classroom is not conducive or chaotic.
Describing	High	He can describe his experiences in words well, such as: easily expressing his ideas when asked for opinions, easily explaining his heart, and being able to explain what he feels (for example when he feels dizzy). Furthermore, he was also sometimes able to mention or describe the difficulty of the questions after the test was carried out.
Acting with awareness	High	Can act and do activities with full awareness as shown by: when studying he always only focuses on the material explained by the lecturer in class, focuses all his attention on the book if he is reading, when discussing with his friends he enjoys the process, realizes the response when he is asked spontaneously, does not easily daydream when doing certain activities, and rarely does several activities at once.
Accepting without judgment	High	Having the ability to accept any events and circumstances, without judgment or criticism, such as: He tends not to judge or label his thoughts as good or bad, does not criticize himself when he is different from others, does not reproach himself when he is angry for no reason, and can even accept experiences even if they are unsuccessful (for example from competitions or tests). As he said, "Accept what is and will fight again".
12. AGDS		
Observing	High	Can pay attention to stimuli in his environment, such as: often noticing if his mood starts to change, as he said "When I feel sad there is a certain heaviness in my heart, so I can feel the change in mood". In addition, he also often notices if there is a smell around him and if the atmosphere in the classroom is not conducive due to certain disturbances.
Describing	Low	He has difficulty finding words to describe his experiences, so it also makes him sometimes feel confused when asked to express hopes and explain his heart, express ideas when asked for opinions, unable to explain what he feels (for example when feeling dizzy). Some of these things happen because as he said "sometimes I lose the words to explain my feelings especially when I am sad" or "I am intimidated by my friends' critical and good opinions". Based on his expression, it shows that his feelings and thoughts greatly influenced and hindered him in describing his experience.
Acting with awareness	High	Can act and carry out activities with full awareness as shown by: when studying he often only focuses on the material explained by the lecturer in class, focuses all his attention on the book if he is reading, when discussing with his friends he enjoys the process and tends to realize the response when he is asked spontaneously and does not easily daydream when doing certain activities.
Accepting without judgment	High	Having the ability to accept events and circumstances, without judgment or criticism, such as: not judging or labeling his thoughts as good or bad not reproaching himself when he gets angry for no reason and accepting the experience even if it is a failure (for example from a competition or test).

The tendency of high mindfulness in adolescent candidates for the IJSO will greatly help them improve their academic performance and ultimately support them in carrying out their competition successfully. Leland's (2015) research shows that mindfulness can help students become more successful learners, influence academic performance, improve critical thinking skills, and help increase awareness and self-control. Mindfulness also has the potential to improve cognitive processes, which in turn can play an important role in more effective learning and information processing, resulting in better academic outcomes (Alomari, 2023).

In education, mindfulness is one of the necessary conditions that can improve attention, encourage creativity, and enhance the transfer of skills and knowledge to new contexts, the development of deep understanding, student motivation and engagement, and the development of learners to be more independent (Henriksen et al., 2020; Holland et al., 2017; Ritchhart & Perkins et al., 2000; Zhang et al., 2021). Mindfulness can also strengthen an individual's attention, helping them focus and let go of distractions. This can also happen because, through mindfulness, automatic processes (autopilot) can be controlled more consciously to reduce intrusive reactions that individuals may have (Broderick & Jennings, 2013). This will also lead individuals to better self-control in a way that mindfulness can help them learn new things, be non-judgmental, explore experiences without prejudice, and help them respond or have healthier problem-solving skills. By allowing them to pause and reflect on their thoughts and emotions, they can consider their next reaction (Broderick & Jennings, 2013; Coholic, 2011; Leland, 2015).

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Furthermore, critical thinking skills are a higher-order cognitive process involving analyzing and evaluating evidence and arguments (Noone et al., 2016). These skills will certainly support the learning process or information processing done by IJSO adolescent candidates, which can help them succeed in the competition. Mindfulness can be used as a strategy that can build critical thinking in individuals (Škobalj, 2018), because with mindfulness, individuals can pay attention to something more deeply, which in turn can lead to critical reflection on the object of observation, including how to understand the cause and effect of certain conditions, or even see these conditions in a broader context (Škobalj, 2018). Thus, individuals can also deepen their understanding and insight (Holland et al., 2017).

Mindfulness is also very beneficial psychologically, especially for adolescents. Mindfulness can help adolescents have an emotional balance supporting their learning and general well-being (Broderick & Jennings, 2013; Lawlor, 2014). Mindfulness can be useful in reducing the risk to psychological well-being that may result from excessive information transfer and stressful events experienced by individuals (Holland et al., 2017). This condition is also similar to that experienced by adolescent candidates for IJSO. During the training center before the competition, they studied every day with a large amount of material for two consecutive months. In addition, they also often get tests for some of these subjects. However, because they have a high tendency of mindfulness, adolescent candidates for IJSO can handle some of these conditions and transfer information well. Their high mindfulness helps them reduce stress, cope effectively with academic challenges, manage test anxiety, and contribute to the overall learning process (Alomari, 2023).

In addition, mindfulness can also help individuals be more aware of their happiness and feelings of happiness, be calmer and more relaxed, increase inner peace, accept and tolerate stress, manage stress better, reduce anxiety, support personal growth (such as increasing generosity, self-efficacy, self-confidence, responsibility, and love), help notice and regulate maladaptive thoughts and emotional responses, and develop resilience in terms of general well-being (Ager et al., 2015; Bostic et al., 2015; Carelse, 2013; Creswell, 2017; Langer et al., 2019; Peck et al., 2021). So that individuals can independently and positively develop strategies to improve their psychological well-being while developing social skills, caring, and deeper positive relationships with friends, family, or their environment (Ager et al., 2015; Zhang et al., 2021). Therefore, mindfulness can be used as a set of skills that can be learned and practiced to reduce psychological symptoms, improve health and well-being in individuals (Baer et al., 2006), and be a proven strategy for improving mental health in adolescents (Kang et al., 2018).

4. Conclusion

Based on the findings and discussion of the research that has been presented, the tendency of mindfulness in adolescent IJSO candidate participants is in the high category. In addition, the analysis of the aspects of mindfulness conducted shows that the behavioral indicators or characteristics of mindfulness tendencies in each candidate participating in IJSO are quite diverse. The study's results explain the contribution to the psychological dynamics regarding the tendency of mindfulness in gifted adolescents, especially IJSO participant candidates. Recommendations for further research can use a population with a larger number of samples or data so that the generalization ability of the research findings is not limited and so that the research results can be applied to a wider population, not just to the sample studied. In addition, further research can also analyze based on indicators and use the case study method in analyzing the psychological dynamics of gifted adolescents, which in turn can develop guidance and counseling services for developing their potential.

Author Contributions

All authors have equal contributions to the paper. All the authors have read and approved the final manuscript.

Declaration of Conflicting Interests

The author declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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