

Abstract

Future perceptions encompass the subjective representation of an individual's personal future manifested in their hopes and fears in various life areas. Such perceptions are comprised of plans, ambitions, expectations, and concerns one may have regarding possible life events in the near and distant future (Seginer, 1988a, 2001). Many studies have investigated the factors impacting future perceptions, with some scholars linking future perceptions with self-efficacy (Lent & Worthington, 2000; Gomez & Beachum, 2019) and others linking them to individual EFs (executive functions). The term *self-efficacy*, coined by Bandura (1997), addresses the belief of individuals to act in promotion of their goals and attain their definition of desirable outcomes. Studies have shown that self-efficacy stems from self-perceptions regarding knowledge, personal abilities, task execution, control related to specific future actions (Goddard, Hoy, & Woolfolk-Hoy, 2004). Executive functions refer to the mental processes required to execute myriad cognitive tasks (Diamond, 2013).

Various factors impact the changes that occur to individual self-efficacy and EFs throughout one's lifetime, including relevant developmental stage. For example, the transition from primary to middle school is considered a critical time in the development of personal beliefs, abilities, and academic values of pupils (Gniewosz et al., 2012). This period is particularly difficult and complex for pupils, entailing many cognitive, physical, and socio-emotional changes and meeting new demands (Rockoff & Lockwood, 2010; Ryan et al., 2013). The pupils are assigned to new classrooms which can be seen as new frames of reference, they have to deal with their new peers (experiences related to social comparison) and with their new teachers. The transition to middle school occurs at the same time as puberty which is characterized by emotional changes, physical changes, many misgivings, and a search for identity (Erikson, 1964). These make the period after the transition to middle school a critical period in which the pupils go through many changes, throughout the year they deal with those changes and find their place within the school. Hence, this period after the transition to middle school was chosen in this study as the examined period. The changes that occur during this transition to middle school may influence plans formulated and followed throughout the rest of their lives.

The current study was aimed at identifying the ties between sense of self-efficacy and EFs and the future aspirations of adolescents following their transition to middle school, examining how EFs moderate the links between self-efficacy and future plans in this age group.

This longitudinal study included 68 grade-7 pupils: 32 boys (52.94%) and 36 girls (47.06%). Half the participants were aged 12 ($n=34$) and half were aged 13 ($n=34$). Responses were measured at the outset and end of a 5-month period.

Data collection was accomplished using five questionnaires to examine academic self-efficacy in math and history, general questions about their personal background, and one question regarding plans for future studies. Additionally, pupils were asked about general plans for the future and their outlook on potential careers in the fields of math, biology, art, computers,

social sciences, and English. Pupils' EFs were measured using 12 tasks, such as naming, memory, visual-spatial awareness, abstraction, attention, verbal skills, articulation, speech, and time/space orientation. I initially met each respondent (closed camera) via Zoom to provide the questionnaires and then conducted the EF tasks with the camera turned on. Five months later, I again conducted the same Zoom meetings with each to complete the second measurement in the same manner.

The study stemmed from three central hypotheses, divided into two groups:

1. At any point in time for adolescents in the transition to middle school there will be a positive correlation between self-efficacy and future ambitions. Additionally, two measurements of this period (outset and end) will prove predictive in that self-efficacy will indicate a change in their stated ambitions.
2. At any point in time for adolescents in the transition to middle school there will be a positive correlation between EFs and future ambitions. Additionally, two measurements of this period (outset and end) will prove predictive in that EFs will indicate a change in their stated ambitions.
3. In the first measurement and through the measured interval during the transition to middle school, interactions between self-efficacy and EFs will show that better EF scores will indicate lower correlation between self-efficacy and ambitions.

Study findings support the argument that self-efficacy plays an important role in various aspects of career development (Bandura, 1986, 1997). Results demonstrate how pupils that consider themselves good at math tie that directly to their potential success in that field and related fields, such as biology, computers, and English. However, it seems there are areas pupils have an opposite reaction to relatively high estimate of math skills, such as potential careers in the arts. Moreover, current findings indicate a correlation between pupils' EFs and their motivation to study certain fields (as seen in first responses), and between their aspirations to pursue math, biology, and computers university studies. Analysis of interactions between self-efficacy and EFs regarding future goals revealed self-efficacy has greater contribution to impacting plans than executive functions.

Moreover, in contrast to the study hypothesis in the predictive interval between measurements regarding the role of both self-efficacy and EFs predicting changes to ambitions, findings indicate that aspirations to a math career is the predictive factor impacting self-efficacy and EFs in certain fields. Meaning, the desire of pupils to attain a certain position is the driving force behind self-efficacy in math and their ability to express that ability.

These findings further support relevant literature on the transition to middle school as a significant time that influences pupils' future goals, particularly in their studies and potential careers. It seems there is a difference in the determination of goals between the initial transition immediately after beginning middle school and towards the end of the year. The developmental stage of pupils at this point does affect thoughts of the future, but it seems that school environment and feedback from teachers also influences goals, with pupils stressing the

importance of STEM subjects (math, computers, biology) over humanities and social sciences. Additionally, it seems society at large also affects goals, as the status attributed to math in general, in the media, and by the Education Ministry shape pupils' ambitions. As educators, we all share the objective of encouraging learners and providing positive feedback for their abilities, thus nurturing their sense of purpose to make the greatest success of their studies and careers. As a society, we aspire to develop motivated and thoughtful pupils that are on the path of realizing their potential and contributing to Israel's economy.