Examining the Dynamic Nature of Pupils' Educational Aspirations: A Longitudinal Mixed-model Study

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~ This paper describes the results from a fully integrated longitudinal mixed model study examining the nature of, changes in, and interaction between the upper secondary and higher education aspirations of Croatian pupils. The research was carried out over two academic years in which pupils approached the transition from single-structure elementary (primary and lower secondary) education to differentiated upper secondary education. The qualitative part of the study centred on an in-depth exploration of the educational aspirations of 30 pupils from five schools using a series of 118 semi-structured interviews. The quantitative part consisted of repeated questionnaire administration (N=823) while pupils progressed to the final year of elementary education. Generalised Estimating Equations for Repeated Measures Outcome and Latent Curve Growth Modelling procedures indicate significant changes in upper secondary aspirations and stable higher education aspirations over time. Qualitative analyses indicate five patterns of upper secondary education aspirations and three patterns of higher education aspirations. Analysis of the interaction between aspirations at different educational levels suggests that upper secondary aspiration mediates a pupil's aspiration for higher education. These results suggest that special effort is necessary in order to inform pupils about their educational options at both the upper secondary and higher education levels.

Keywords: upper secondary educational aspirations, higher education aspirations, mixed model design, longitudinal research

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Preučevanje dinamične narave izobraževalnih aspiracij učencev: longitudinalna študija z mešanim modelom

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∿ Ta članek opisuje rezultate popolnoma integrirane longitudinalne študije z mešanim modelom, ki je preučevala naravo, spremembe ter interakcijo med srednješolskimi in visokošolskimi aspiracijami hrvaških učencev. Raziskava je bila izvedena v dveh šolskih letih, v katerih so učenci prehajali iz enostrukturnega osnovnošolskega izobraževanja (razredna in predmetna stopnja) v diferencirano srednješolsko izobraževanje. Kvalitativni del raziskave se je osredinil na poglobljeno raziskovanje izobraževalnih aspiracij 30 učencev iz petih šol z uporabo niza 118 polstrukturiranih intervjujev. Kvantitativni del je obsegal ponavljajoče se izpolnjevanje vprašalnikov (N = 823), medtem ko so učenci napredovali v zadnje leto osnovnošolskega izobraževanja. Postopki posplošenih ocenjevalnih enačb za rezultate ponovljenih meritev in modeliranja latentne krivulje rasti kažejo na pomembne spremembe aspiracij v srednješolskem izobraževanju in stabilne aspiracije v visokošolskem izobraževanju skozi čas. Kvalitativne analize kažejo na pet vzorcev aspiracij za srednješolsko izobraževanje in tri vzorce aspiracij za visokošolsko izobraževanje. Analiza interakcije med aspiracijami na različnih izobraževalnih ravneh kaže, da imajo aspiracije na srednješolski ravni vpliv na učenčeve aspiracije za visokošolsko izobraževanje. Ti rezultati kažejo, da si je treba posebej prizadevati za obveščanje dijakov o njihovih izobraževalnih možnostih na ravni srednješolskega in visokošolskega izobraževanja.

Ključne besede: srednješolske izobraževalne aspiracije, visokošolske izobraževalne aspiracije, zasnova mešanega modela, longitudinalna raziskava

Introduction

For decades, research indicated that pupils' educational aspirations predict future educational and more general life selections and consequences. In general, those with advanced educational aspirations are more motivated and have better achievement, as do pupils for whom parents and educational workers have higher educational expectations and aspirations (Gorard et al., 2012; Gutman & Akerman, 2008). Research demonstrating the relationship between educational aspirations and identity formation, subjective well-being, and risk for social exclusion (Bynner, 2000; Kintrea et al., 2011) suggests that the importance of educational aspirations extends beyond the field of education. All of this may lead to the understanding that the educational policy should strongly focus on the raising of aspirations (Harrison & Waller, 2018). However, as Bowers-Brown et al. (2019) suggest, these policy efforts often ignore that the development of aspirations is influenced by the structural and material context of the individual pupil.

There are, however, several reasons for which caution should be exercised in accepting the notion that a positive correlation, or even causal relationship, exists between higher educational aspirations and positive educational and personal outcomes (e.g., Khattab, 2015). First, there are challenges in establishing the causation between aspirations and outcomes; as Gutman and Ackerman (2008) recognise, aspirations can be considered equally as a predictor and a product of a pupil's aptitudes, personal attributes, socialisation, and experiences. Second, and of particular importance to this paper, the relationship between educational aspirations and outcomes is particularly dynamic, shifting throughout the educational journey due to the interaction between individual development and the increasing complexity of educational and other social contexts (Gottfredson, 2002). The dynamic interaction between the individual and various contextual spheres in shaping educational aspirations becomes particularly relevant as pupils approach the transition points in education. During these important educational periods, pupils are being increasingly exposed to diverse information about their own prospects, achievements, and the relative strength of their abilities and talents within a wider group while also being faced with high levels of uncertainty in regard to placement in higher education levels. Under these conditions, it might be expected that educational transition prompts a (re)evaluation of pupils' outlooks regarding self-concept, abilities, ambitions, goals, and, in turn, both upper secondary and higher education aspirations.

This point becomes particularly relevant in educational systems, such as Croatian, Slovene, Serbian, and others in southeastern Europe, where a single-structure elementary education is followed by a differentiated upper secondary

education system in which some programmes imply obligatory attendance of higher education, some offer optional attendance, and others do not allow for vertical mobility towards higher education (Lovšin, 2014; Pešikan & Ivić, 2016). In such systems, the link between upper secondary and higher education aspirations, rarely empirically examined, becomes of vital importance for capturing the complexity of the concept of educational aspirations.

To date, operationalisations of educational aspiration have not adequately captured the complexity of the relationship between educational aspirations and various factors stemming from the individual, peers, family, school, and wider society (e.g., Khattab, 2015; McCuloch, 2017). Typically, educational aspirations have been operationalised by considering the duration of formal education one aspires to complete, where attending or gaining a university degree is calibrated to higher levels of educational aspiration. For several reasons, such operationalisation of a complex concept seems simplistic. First, it implies a conceptualisation of educational aspiration that is exclusively focused on progression in formal education and the attainment of formal qualifications. An even more compelling argument for questioning such an operationalisation stems from the debatable notion that more years of schooling and academic titles from tertiary education institutions can be directly equated with qualitatively higher aspirations. Individuals and groups may hold qualitatively different perspectives about what education is, what it incorporates, and what its role in fulfilling more general life aspirations is. Furthermore, operationalisations examining individual aspirations to attend a higher education institution alone are becoming insufficiently discriminative in light of increasing access to higher education in the most developed countries (Schoon, 2010). Croatia is not an exception to this trend; data indicates that 67% of eligible pupils become higher education students immediately upon completion of upper secondary education (Jokić & Ristić Dedić, 2014).

Based on the conceptualisation proposed by Jokić & Ristić Dedić (2013), educational aspirations are defined as

> […] the ambitions and goals pupils hold with regard to both immediate and future educational experiences and outcomes. Educational aspirations are related to educational achievement, but they might also be tied to the pupils' cognitive and conative development or various other educational and personal elements. The educational aspirations of pupils are extremely diverse and constantly changing in interaction with the environment. (p. 27)

This definition is sufficiently broad to address the multidimensional, contextual, and developmental nature of pupils' educational aspirations and to

allow for a methodologically diverse examination of pupils' educational aspirations during the transitional period between elementary education and differentiated upper secondary education.

The literature strongly emphasises the contextual nature of pupils' educational aspirations (Berrington et al., 2016; Gutman & Akerman, 2008). Findings suggest that pupils' educational aspirations are shaped by the characteristics of the pupil and his/her educational experiences, as well as through pupils' interactions with parents, peers, schools, and communities and the influences of the current economic situation and wider socio-cultural and media forces. As such, the formation and development of pupils' educational aspirations might be envisaged inside a broader ecological system grounded largely on Bronfenbrenner's (1993) ecological paradigm and model. In Bronfenbrenner's model, the individual is positioned at the centre of the ecological system. In our research, the previously defined educational aspirations are located at the centre of the model. This system (Figure 1) is divided into four socially organised subsystems, representing a set of nested and interrelated structures that are potentially associated with pupils' educational aspirations. These structures vary from the immediate individual characteristics of the pupil to the more remote school environment and resemble Bronfenbrenner's dimensions, ranging from the microsystem to the macrosystem. The interaction of individual characteristics and those stemming from parental and school contexts gains complexity as pupils progress through their education. Consequently, the complexity of this interaction influences their educational aspirations in non-linear ways. Of particular importance to our work is the existence of a chronosystem as a time-based dimension influencing the entirety of the ecological system. As pupils approach educational transition points, the salience of aspirations increases at all levels.

Figure 1

Conceptual framework of pupil's educational aspirations

PUPIL

PARENTS

CLASS

SCHOOL

PUPIL'S EDUCATIONAL
ASPIRATIONS

TIME
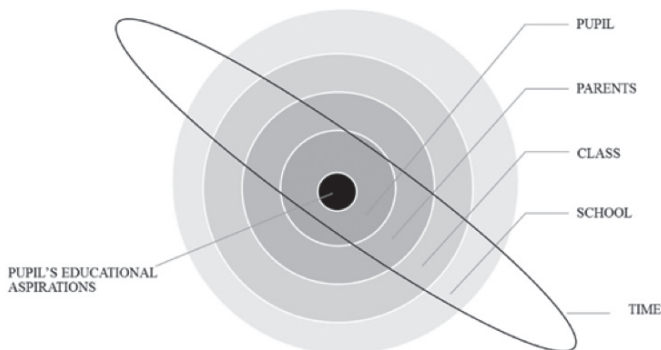
The literature offers extensive insight into the possible determinants of pupils' educational aspirations (e.g., Eccles & Wigfield, 2002; Gorard et al., 2012; Gutman & Akerman, 2008). In our paper, we focus on an exploration of the nature of pupils' educational aspirations and their determinants arising at the most proximal level (i.e., the pupil) that influence upper secondary and higher educational aspirations over time.

The simplistic nature of current operationalisations of educational aspirations has also been associated with the almost exclusive use of single-method research designs. Arguably, the dominance of quantitative over qualitative approaches and the lack of mixed method designs combining both quantitative and qualitative approaches has not allowed for an exploration of the complex nature of educational aspirations. Recently, there has been more frequent use of longitudinal research designs on large data sets, allowing for the exploration of aspirational change over the course of education (e.g., Baker et al., 2014; Berrington et al., 2016; Khattab, 2015; McCulloch, 2017). However, there is a need for more studies aimed specifically at educational aspirations that are longitudinal in character in both quantitative and qualitative components.

The context of the Croatian education system

The present study is conducted in the context of the Croatian education system as an example of the system in which single-structure elementary education is followed by a differentiated upper secondary education. Single-structure elementary education consists of eight years of compulsory schooling and encompasses both primary (4 years) and lower secondary (4 years) levels. It is almost completely state-funded, and enrolment is based on catchment area. The transition to upper secondary education, when pupils are 14–15 years of age, is based primarily on a selection process grounded on school achievement in grades 5–8. The Croatian upper secondary education consists of two major forms of vocational (VET) programmes (3- and 4/5-year programmes) and general secondary education programmes ('gymnasium'). Although not compulsory, nearly all pupils enrol in an upper secondary programme, and once enrolled, nearly all pupils successfully complete upper secondary education. Upon completion of a 3-year VET programme, pupils acquire a professional qualification but are not allowed to apply for higher education institution (HEI) programmes without completing a bridge programme. This group of pupils represents 22.9% of the cohort of all upper secondary school graduates. Pupils successfully completing 4-year or, in the case of a small number of health programmes, 5-year VET programmes acquire a professional qualification and are also eligible to apply to all HEI programmes. Graduates of these programmes

represent the largest proportion of the pupil cohort, attended by 46.4% of pupils. Completion of a gymnasium program, achieved by 30.7% of Croatian pupils, does not result in a professional qualification. Instead, pupils are expected to attend HEI programmes in order to gain such qualifications (Ministry of Science and Education of Croatia, 2021).

The present study

This paper presents the results of research that applied a fully integrated longitudinal mixed model design over the course of two academic years. Using both qualitative and quantitative data, it aims to probe the nature of and changes to the educational aspirations of Croatian pupils as they approach the transition from single-structure elementary (primary and lower secondary) to differentiated upper secondary education. The complex and dynamic nature of educational aspirations emphasises the need to consider the possibility that pupils' educational aspirations may qualitatively differ at diverse time points as pupils approach this transition. In this paper, we consider educational aspirations as they relate to both upper secondary and higher education, with particular focus on the crucial link between the two. Our examination of change in educational aspirations focuses on *intra-individual* change as pupils progress through the final two grades of elementary education. More specifically, this paper aims to answer the following research questions:

> *What is the nature of pupils' upper secondary and higher education aspirations at the end of elementary education?*
> *How do pupils' upper secondary and higher education aspirations change as they approach transition to differentiated upper secondary education?*
> *In what ways are the upper secondary and higher educational aspirations related as this transitional period approaches?*

The proposed research aims to make an original contribution to existing knowledge by examining the educational aspirations of pupils still attending undifferentiated elementary education. By combining and integrating quantitative and qualitative methods in all research phases, the project also aims to offer new methodological perspectives for researching educational aspirations. Finally, the proposed project aims to offer more complex conceptualisations and operationalisations of educational aspirations by relating upper secondary and higher education aspirations.

Method

Participants

The quantitative part of the research was conducted in 23 elementary schools in Zagreb (of the 107 schools, this represented 21.9% of all elementary schools in Zagreb). This group of schools constituted a random sample stratified by school location (districts in the city of Zagreb). This sampling strategy ensured that districts differing in size and socioeconomic structure were represented in the school sample. A minimum of two 7th-grade classes in participating schools were randomly selected, and all pupils from these classes were invited to participate. Informed written consent was obtained from the pupils' parents. Pupils participated in the research at three time points over two academic years: at the end of 7th grade, at the midpoint of 8th grade, and at the end of 8th grade. Altogether, 1021 pupils participated in the first data collection point, 1012 in the second and 992 in the third data collection point at the end of the 8th grade. In total, 823 pupils participated in all three data collection points, and their responses were analysed. Attrition of participants over the course of the three data collection waves was not substantial, in which the proportion of those participating in all waves represented 80.6% of the total number of pupils participating in the 1st time-point. The data collection points were six months apart.

Qualitative data were collected over the course of two academic years with 30 pupils from five schools in Zagreb that were not a part of the quantitative research sample. To achieve maximum variation, schools were purposively selected for participation based on existing data collected during previous research efforts regarding various school-level socio-economic and educational indicators (e.g., educational status of parents and enrolment of pupils in different streams of upper secondary education). Of the five participating schools, one could be characterised as having 'higher parental educational status – higher gymnasium enrolment', two schools had 'diverse parental educational status of parents – diverse enrolment', and two had 'lower parental educational status – higher VET enrolment'. In each school, six 7th-grade pupils participated in the study. Teachers and researchers selected participants using pre-established selection criteria based on gender and previous school attainment (3 categories – above average, average, and below average).[3] Data were collected at four equidistant time points: at the midpoint and at the end of 7th grade and at the midpoint and end of the 8th grade. In total, 118 interviews were conducted, recorded, and transcribed. All data in both research phases were collected by the research team members.

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3   Notation of the interview excerpts is based on gender (G=Girl; B=Boy) and the ordinal number of interview- one to four.

Instruments

Quantitative phase

In this paper, the analysis of two items examining educational aspirations that were included at all three time points is presented. These items were part of the tailor-made questionnaire examining pupils' well-being, competence and self-efficacy beliefs, subjective value of the school subjects, beliefs and expectations about future personal life and career.

Pupils' aspiration for higher education

Pupils were asked to specify the level of agreement with the item. *In the future, I want to pursue higher education.* Answers were recorded on a Likert-type scale: 1 – *I strongly disagree*; 2 – *I disagree*; 3 – *I neither agree nor disagree*; 4 – *I agree*; 5 – *I strongly agree.*

Pupils' aspiration for upper secondary education

Pupils were asked to provide a response to the question *What type of upper secondary education would you like to pursue?* Possible responses were: *3-year VET education, 4-year VET education, Gymnasium education (general upper secondary education); I still don't know.*

Quantitative data were analysed using various statistical procedures. Responses to the item probing aspirations for upper secondary education were treated as nominal and analysed with SPSS GEE (Generalised Estimating Equations for Repeated Measures Outcome) procedures (Heck et al., 2013; IBM SPSS, 2018). The patterns of individual changes in pupils' responses over time are also presented graphically with a lasagne plot. Responses to the item examining pupil aspirations for higher education were analysed with Latent Growth Curve Modelling in MPlus (Muthen & Muthen, 2020; Wang & Wang, 2019) with the aim of examining the change in participants' answers over time. In order to identify differences in higher education aspirations (measured at the final time-point) among groups of pupils with different upper secondary aspirations (also measured at the final time-point), a non-parametric Kruskal-Wallis test followed by post-hoc procedures were conducted, and effect sizes were reported.

Qualitative phase

The themes discussed in pupil interviews stemmed from the conceptual framework of the study, as well as from data analyses occurring in previous data collection time points. Over the course of four interviews, participants were repeatedly asked about their upper secondary and higher education aspirations, the rationale behind their opinions, their views on the different streams of upper

secondary education, the value of higher education, and the role of school, parents, peers, and significant others in forming and shaping their aspirations.

Interviews were transcribed and organised using NVivo software (QRC, 2018). Interview coding was conducted by research team members. The framework for analysis was grounded on the twelve tactics for generating meaning from interviews (Miles & Huberman, 1994) and a constant comparative approach, linking elements of inductive category coding with a simultaneous comparison of interview data with that collected from the quantitative phase of the study (Strauss & Corbin, 1998).

Analytical coding of interviews ensued in two stages. The first was grounded on theoretical and thematic coding of the data at higher levels of the coding scheme, while a more interpretative coding was embraced in the second stage. A hierarchical coding scheme consisting of three levels was developed and is presented in Figure 2.

Figure 2

Coding scheme used for the analysis of the qualitative data Research design
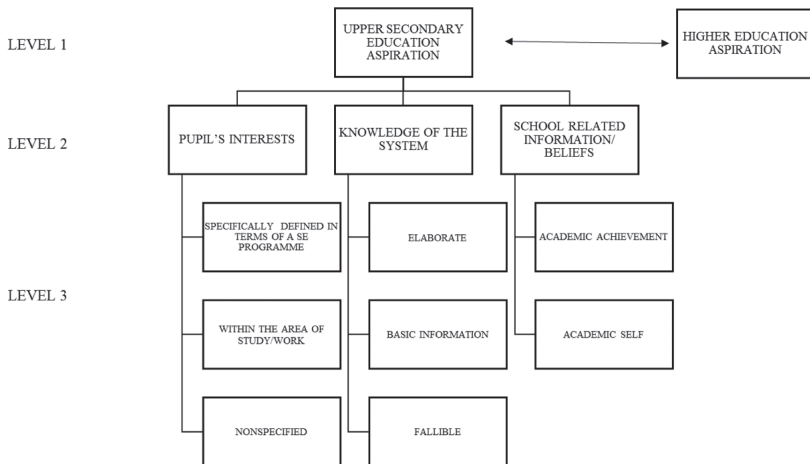
Research design

Within the longitudinal mixed model design, both qualitative and quantitative research phases were considered to be of equal importance. The longitudinal character allowed for an examination of change in educational aspirations over time. The first qualitative phase preceded the first quantitative phase and informed the initial questionnaire construction. From that point, the qualitative and quantitative parts of the study ran concurrently and interactively

influenced each subsequent phase as data analysis and inferences from previous time points proceeded. The quantitative phase consisted of the administration of a pupil questionnaire over three time points. All questionnaires were administered at schools during class time. At each time point the questionnaire consisted of items that were repeated at all three time points, while a number of additional items aimed at examining specific variables and concepts from the various spheres related to pupils' educational aspirations were added at certain time points. The qualitative part of the study centred on an in-depth exploration of the nature and formation of educational aspirations through a series of semi-structured interviews with pupils in their own schools; the interviews were, on average, 30 minutes in duration.

Results

Upper secondary education aspiration

Pupils' responses on questionnaire items inquiring about their aspirations for upper secondary education over the three data collection points are presented in Table 1.

Table 1

Distribution of pupils' responses about their upper secondary education aspirations

What type of upper secondary education would you like to pursue?	1st time-point	2nd time-point	3rd time-point
	%	%	%
I still don't know	24.5	13.9	4.5
3-year VET	5.7	5.7	7.9
4-year VET	25.9	33.0	40.3
Gymnasium	43.9	47.4	47.3

Overall, the results indicate high levels of aspiration for gymnasium education, with a relatively stable proportion of pupils aspiring for this type of upper secondary education in three research waves. This is followed by aspirations for 4-year VET education, where aspirations for this type of education (on a general level) increase over time. The proportion of pupils aspiring to pursue a 3-year VET education is relatively low. As expected, the number of those who are undecided about their preferred upper secondary educational path decreases significantly as the transition point approaches.

GEE modelling (Generalised Estimating Equations for Repeated Measures Outcome) using a repeated measure of upper secondary aspiration as

categorical outcome (specifying multinomial distribution with cumulative logit link function) and time as a covariate show significant time effect (Wald Chi-Square=9.40, df=1, p=.002). Parameter estimates of the model are presented in Table 2.

Table 2

Parameter estimates for the model of pupils' upper secondary aspirations over time (aspirations are treated as a nominal variable, time-related variable as a covariate)

	Upper secondary aspiration	B	Std. Error	Wald Chi-Square	df	p	Exp (B)
	I still don't know.	-1.69	.075	507.18	1	<.001	.19
Threshold	3-year VET	-1.24	.071	301.81	1	<.001	.29
	4-year VET	.26	.069	14.27	1	<.001	1.30
Time		.08	.027	9.40	1	.002	1.09

Negative log odds coefficients suggest that over time, pupils were less likely to be in the categories 'I still don't know' and '3-year VET' education compared to the reference category of 'gymnasium'. A small but statistically significant positive coefficient comparing 4-year VET education to the gymnasium category indicates increased odds of being in the 4-year VET category over time.

The patterns of these changes in all 823 pupils' individual upper secondary education aspirations are also graphically represented in Figure 3. The first column represents individual responses in the first research wave. From there, the second and the third columns represent a choice of each pupil in the second and third research waves. The overall change in colours represents all 823 patterns.

Figure 3

Change in individual upper secondary education aspirations over time
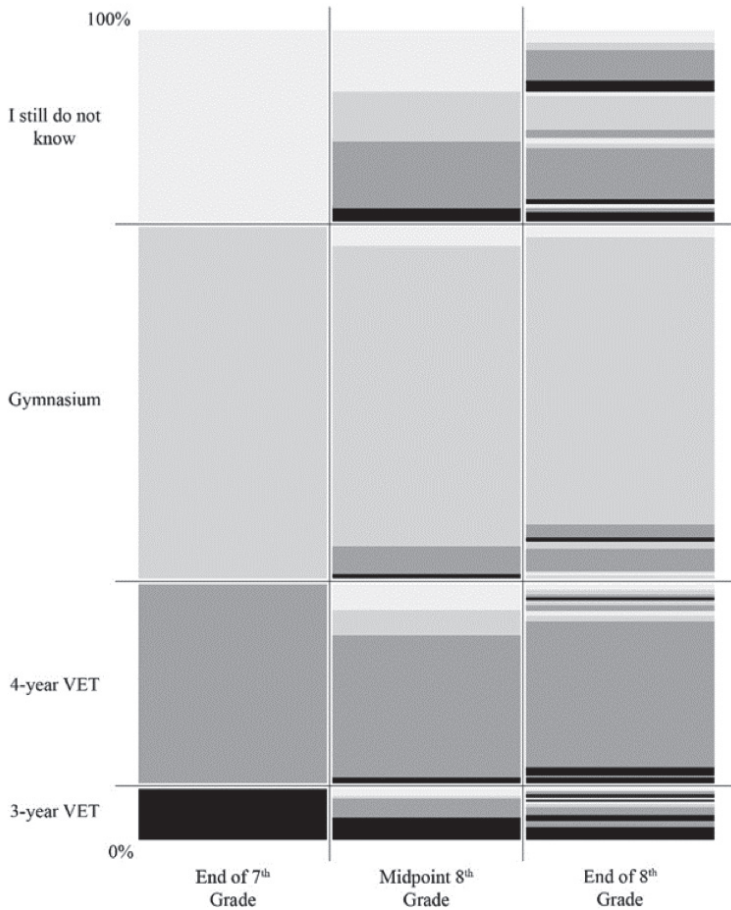
As can be observed in Figure 3, the most frequent pattern of aspirations is one in which pupils aspire to pursue gymnasium education at all three time points (36.0% of the total sample), followed by a stable aspiration for pursuing 4-year VET education (16.9%). Smaller proportions of pupils exhibit a pattern in which they were undecided only at the first time-point (i.e., end of the 7th grade) but consequently formulated clear aspirations for 4-year VET education (7.3%) or gymnasium education (4.6%). In most cases, pupils who were undecided about their upper secondary education at the outset of the study opted for 4-year VET programmes at the end of the 8th grade. A change in aspirations over time is particularly present for those who reported an aspiration to pursue

3-year VET programmes in the 7th grade. Only 2.4% of pupils had stable aspirations for pursuing a 3-year VET education. At the end of the 8th grade, 1.5% of pupils in the sample were still undecided about the type of upper secondary education to which they aspired.

Our analyses of qualitative data over time allowed for triangulation and further exploration of the nature of changes in educational aspirations identified in the quantitative data. Specifically, this phase of the analysis enabled the identification of five patterns of upper secondary aspirations among pupils. These patterns will be discussed in the following sections.

1.   *Firm gymnasium aspiration – pursuing defined academic interests*

This pattern is characterised by a firm aspiration for gymnasium education that is stable over the final two years of elementary education. Pupils exhibiting this pattern are all high achievers and frequently expressed specific interests in some discipline or school subject from the initial interview, as evidenced in the following interview excerpts:

> *'I was always great in Maths. I mean, at least everyone at home and here in school tells me so, and for me, mathematical gymnasium is a normal choice' (B, 1)*
>
> *'I am good in all subjects, but languages are something I really like, and I am not 100% sure, but 99% (laughs) I will go to a language gymnasium.' (G, 1)*

As interviews progressed, the aspirations of pupils in this category did not change, as evidenced in the words of one pupil from the third interview:

> *'As I told you twice already, it is only MIOC [prestigious mathematical gymnasium] for me. It's been like that from the 4th grade. My brother goes there, and my parents went there too.' (B, 3)*

Extremely high achievement that is characteristic for the pupils in this group allows them the privilege of choosing a gymnasium programme and even a particular school with no risk of failure at entry selection. In this case, high achievement is coupled with the identification and personal realisation of interest, specified through a particular area of study and specific gymnasium programme, and all information related to school is positive, thus reinforcing positive academic self-beliefs and aspirations. Interestingly, despite high levels of achievement and aspiration, most pupils in this group demonstrated comparatively low levels of knowledge about the upper secondary education system. As the realisation of these pupils' aspirations is certain, they do not feel the

need to explore other options. This is indicated in the words of one pupil from a more privileged school context:

> *'I know only of gymnasiums. I mean, there are schools for those not-so-good pupils, but I don't know about them.' (B, 1)*

2.   *Firm gymnasium aspiration – delaying the choice*
From the first interview, a fifth of pupils expressed a general aspiration for gymnasium education but made no clear statement of their academic interests. These pupils, while consistently successful in school and holding a positive perception of their academic self, were unable to direct their aspirational choices towards specific academic domains:

> *'I would like to go to a general gymnasium. My parents tell me that I am good in foreign languages, but I am not sure.' (B, 2)*

In later interviews, this position became more clearly tied to the notion that general gymnasiums offered education with a wide academic reach. For these pupils, expressing a general aspiration to attend a gymnasium offered a means to delay making a more specific decision:

> *'I think I will go to a general gymnasium. These other types of gymnasiums I'm really not sure about. Why you need so many foreign languages and maths gymnasiums is the other extreme. For me, I think this choice is the best so I can see what to do with myself.' (B, 4)*

Also, in the words of another pupil from a different setting:

> *'I am not great at Maths. I mean, I have an A, but really…If I go to VET school, then I would be fixed to one work domain. And since I still don't know what to do, then it's a general gymnasium, and I still have four more years to decide' (G, 4)*

This excerpt also suggests a more refined understanding of the upper secondary system than that expressed by pupils in the previous group, which perhaps enables this pupil to make a more strategic decision regarding her educational pathway.

3.   *Firm VET aspiration – pursuing clearly defined specific interest*
In contrast, a substantial number of pupils expressed an aspiration to pursue VET programmes from the very first interview. Pupils in this category varied in their educational achievement level and perception of their own abilities. For all pupils falling into this group, VET programmes were perceived to

be more aligned with their own attributes and interests, and more instrumental for achieving professional goals than gymnasiums:

> *'I don't aim for gymnasiums. I am more of a VET school type. More practical, if you get me.'(B, 1)*
> *'I feel it's better to go to these VET schools than to gymnasiums because you have a secure job when you're finished' (G, 3)*

In addition to the perceived instrumentality of VET education, pupils in this group also felt that VET education represented a better fit with their own interests:

> *'I am all into computers and things, and I am OK at school. But you know, why do I need to learn something like Latin or, I don't know, what if I want to learn about computers?' (B, 3)*

In this group, personal interests were more highly linked to a specific profession or area of work rather than an academic discipline such as maths or languages:

> *'I am very interested in aeroplanes, air traffic, and such. In fact, this is the only thing that I am interested in, so I would like to go to pilot and air traffic school' (B, 1)*

This stable aspiration for VET programmes is particularly evident among pupils who do not have the highest levels of educational achievement:

> *'In the end, I think I will go for a cook. Mom and I looked at the programmes, and that's it. I love to cook, and it's interesting for me. I mean I will have good pay, and it's in high demand on the market.' (B, 4)*

4.   *From undecided towards VET education*

During the first interview (7th grade), a number of pupils expressed indecision regarding their upper secondary education aspirations. However, over subsequent interviews, this group arrived at a firmer position of aspiring towards either gymnasium or VET education programmes. In almost all cases, the latter group (those eventually expressing an aspiration to pursue VET education) demonstrated very limited knowledge of the upper secondary system in the initial interview:

> *'I don't know what types of high schools exist. There is this gymnasium close to our school. I know that. My mum always teases me that I will end up in a school for carpenters or garbagemen if I don't get good grades. This high school thing is really not my territory.' (B, 1)*

Apart from a relative lack of knowledge of future educational opportunities, this group of pupils was also characterised by generally lower levels of academic achievement. As such, the formation of their upper secondary aspiration was highly dependent on feedback received from the school in terms of academic performance during the final two years of elementary school. Eventually, these pupils align their aspirations to the level of expected and achieved academic outcomes:

> *'After all, it all depends on my grades. When it comes clear how I'll do, then we'll see.' (G, 3)*

For most of these pupils, the aspiration to pursue VET education was formulated in the 8th grade and was in tune with more general interests rather than an expressed interest in a specific subject included in elementary education:

> *'I was thinking about graphic school [school for graphic design] because I like to draw from I don't know when. You know sketches, little comics…' (B, 3)*

And in the words of another pupil from a different school during the fourth and final interview:

> *'Finally, I know. Technical school, computing programme. I mean, I knew in the 7th grade that I wanted to do something with ICT but I didn't know anything about high schools. So I talked with my mum, and she told me: "C'mon man, that's it. Go and search the Internet."' (B, 4)*

In addition to the insight these quotes provide in regard to the formulation of pupil aspirations, it is also important to note the influence of the familial sphere on aspiration formulation.

5.   *From undecided towards gymnasium education*

This final profile included pupils who held an undecided position in the initial interview but eventually expressed an aspiration to attend a gymnasium. As was the case for those who later formulated aspirations for VET education, the aspiration expressed by this group seemed largely dependent on expectations regarding school achievement at the end of the final year of elementary education:

> *'I'm not sure. It depends on grades but, at the moment, I still don't know.' (G, 1)*

Over time, and as positive feedback regarding her own achievement accumulated, this pupil eventually arrived at the following position:

'I think I will go to the sports gymnasium because I'm good at karate. I think it's better because I will have more opportunities at university, or maybe I was thinking of the medical VET school for physiotherapists.' (G, 2)

By the end of the study, this pupil had eventually solidified her aspiration for attending a gymnasium. In her words, the important role of others in aspiration formulation among initially undecided pupils is again confirmed:

'I will go to the sports gymnasium. My friend goes there and tells me it's great.' (G, 4)

For pupils who initially express uncertainty about their educational aspirations, it seems that positive feedback in terms of their own academic performance received from school acts to reinforce their sense of academic self. Paired with the higher education aspirations held by these pupils, these self-perceptions played a vital role in the formation of their upper-secondary educational aspirations.

Higher education aspirations

Pupils' responses on questionnaire items inquiring about their aspirations for higher education over the three data collection points are presented in Table 3.

Table 3

Distribution of pupils' responses regarding their higher education aspirations

In the future, I want to pursue higher education.	1st time-point	2nd time-point	3rd time-point
	%	%	%
I strongly disagree	5.3	7.2	8.1
I disagree	5.6	4.4	3.6
I neither agree nor disagree	10.7	13.4	11.8
I agree	22.4	16.9	17.5
I strongly agree	56.0	58.2	58.9

Immediately evident in these results is the high level of higher education aspirations among all pupils, where 76.4% of the sample in the third time-point agreed that they wished to pursue higher education, and only 11.7% expressed disagreement with this statement.

Unconditional Longitudinal Growth Curve Modelling was applied to examine the change in pupils' higher education aspirations over time. The

observed values of pupils' aspirations over three data collection points were specified as a latent growth curve model with two latent variables: intercept (initial level) and slope (the rate of change over time). A description of the specified linear growth curve model of pupils' higher education aspirations is provided through the presentation of the means and variances of intercept and slope (Table 4).

Table 4

The means and variances of latent growth variables: Intercept and slope of pupils' higher education aspiration

Latent growth variables		Intercept	Slope
Mean	Estimate	4.15**	-.005
	S.E.	.035	.014
Variance	Estimate	1.14**	.09**
	S.E.	.072	.028
Correlation Intercept with Slope		-.12	

**p<.01

Goodness-of-fit indices suggested that the model fit the data adequately, as $\chi^2(1)=1.183$, p=.28; RMSEA=.012; CFI=1.0; TLI=1.0; SRMR=.01.

The estimated mean value of the intercept at the end of the 7th grade was 4.15 (p<.01), indicating high initial levels of pupils' higher education aspirations. The variance of the intercept (p<.01) suggests significant variability in this score across pupils at the baseline level. The estimated mean of the slope was very close to zero (p>.05), indicating **no change at the group level, specifi**cally that the higher education aspirations of pupils did not significantly change as they progressed from the 7th to 8th grade of elementary education. However, the variance of the slope showed some variations between pupils in the rate of change over time (p<.01). The correlation between intercept and slope was -.12 and non-significant, indicating that the rate of change was not dependent on the initial level of pupils' higher education aspiration.

As expected, the higher education aspirations of pupils at the end of the 8th grade (3rd time-point) were significantly different between groups of pupils expressing different upper secondary aspirations (H(3)=348.47, p<.01). In order to explore this finding in more detail, Mann-Whitney tests using Bonferroni correction were applied, indicating that all effects are reported at a p=.008 level of significance. All post hoc tests were significant with medium to large effect sizes. Pupils who aspire to gymnasium education have the highest level

of higher education aspiration, and pupils who aspire to 3-year VET education have the lowest.[4]

On the whole, these quantitative results were triangulated by data from the qualitative phase of the research, where a large majority of pupils also expressed an aspiration to attend higher education programmes in the future. Moreover, this analysis confirmed the stability of their position with regard to higher education aspirations. However, qualitative analyses also allowed for a more in-depth investigation of the specific nature of pupils' higher education aspirations and the varying ways in which upper secondary and higher education aspirations were interrelated. As a result of our analysis, these inter-relationships were categorised into three patterns, each of which will be discussed in turn in the following sections.

a.   The Only Way Forward

This first pattern is characterised by views expressed by some pupils about the perceived inevitability of higher education. Many pupils spoke about higher education as 'the only way' to ensure positive life outcomes:

> *'I have to go to university, so I can have a job, make money and have something to live on.' (G, 1)'*
>
> *'It's, like, clear that you can't do anything in life without it [higher education].' (G, 2)*

As expressed by the pupils in these quotes, the aspirations of pupils to pursue higher education were often related to the instrumental and future-oriented goals of the individual pupil. For a considerable number of pupils, higher education was not only instrumental but also related to their own goal of self-realisation:

> *'I want to make something of myself and make some kind of career. If I study now, I will get into a better high school, and if I am good there, then I can enrol in a good university. And this is important for me because I have wanted to study medicine ever since I knew myself.' (G, 2)*

For the most part, the higher education aspirations expressed by this group are so deeply internalised that rarely do pupils express the sentiment

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4 3-year VET – 4-year VET (U = 1875.00, p<.001, r = -0.55); 3-year VET – Gymnasium (U = 282.50, p<.001, r = -0.77); 3-year VET – Don't Know (U = 228.50, p<.001, r = -0.71); Gymnasium – 4-year VET (U = 32554.00, p<.001, r = 0.51); Gymnasium – Don't Know (U = 3170.00, p<.001, r = -0.41). The only exception was a post-hoc test comparing the responses of those opting for 4-year VET education and those who still did not know to which type of secondary education they aspired (U = 5756.00, p>0.05).

that, in pursuing their aspirations, they are fulfilling familial expectations. Similarly, in only a few cases did pupils express the idea of pursuing higher education as a means for personal growth:

> 'I want to study because I want to have better knowledge and help people.' (G, 4)

b.   *Looking Both Ways*

For another group of pupils, aspiration to pursue higher education was linked to upper secondary aspirations for VET education. For these pupils, this combination was explained as the most satisfactory choice in that it offered both the possibility of attending higher education and entering the labour market:

> 'In my opinion, this is the best option [VET]. Some kids don't get it. You can work, but if you want, you can also go to university.' (B, 3)

This open position is also one that was communicated to some pupils by their families:

> 'My parents told me that they [employers] are now looking more for people with higher education. And then we talked, and Dad told me I can still go to uni after VET school and at the end I think I will go.' (B, 4)

c.   *Straight to Work*

The third secondary-higher education aspirational pattern to become evident in our analysis is characterised by a lack of higher education aspiration, most often combined with firm aspirations for 3-year vocational education. In this group, pupils often expressed the perception that higher education represented a level of education incompatible with their personal characteristics:

> 'I don't see myself at uni. I'm not for that kind of thing. Now I just want to go to work.' (B, 1)
>
> 'Oh no, uni. That's too much for me. Maybe high school is too much for me (laughs). I need something where I can work.' (B, 3)

Strongly represented in the sentiments expressed by pupils holding this position is the aim to enter the labour market as soon as possible. Interestingly, however, the views expressed by this group also suggested a readiness, if necessary, to pursue higher education at a later stage:

> 'I don't know. Some people go to uni later, don't they? So if I need it, I will go.' (G, 3)
>
> 'For me, this uni is just…I mean it's an opportunity, but you can work and pay for uni. You know, I work, and I pay for uni, but I also go out with

friends, drinking and such. So, I could pay for that, but frankly, I don't want it because I want to work as soon as I can.' (B, 4)

Discussion

The findings of the present study revealed five underlying patterns in the educational aspirations expressed by Croatian pupils approaching the transition to upper secondary education. Both qualitative and quantitative results suggest that while, for some pupils, these aspirations are relatively stable during this period, the aspirations of other pupils are observed to evolve as they progress through the last two years of elementary education. Regardless of whether these aspirations were stable or changed over time, the findings indicate that the existence and development of pupils' specific interests, feedback about their academic performance and knowledge about educational options play a vital role in the formation of these aspirations. In general, pupils with clearly defined interests, regardless of their academic achievement, exhibited more specific upper-secondary education aspirations. For some, indecision in regard to upper secondary aspirations seems to be related to a lack of knowledge about the possibilities in upper secondary education or, in most cases, to the calibration of educational aspiration to one's own educational achievement. This is consistent with findings previously reported by Khattab (2015). The findings support the idea of the importance of the intrapersonal and interpersonal processes stemming from the pupils' microsystem and mesosystems on the formation and development of pupils' upper secondary aspirations (Bronfenbrenner, 1993; Grim et al., 2019).

Latent Curve Growth Modelling of the longitudinal data suggests that among Croatian pupils, higher education aspirations are high and stable over time. The difference in stability between upper secondary and higher education aspirations may be due to the time distance of the two. Perhaps one of the key findings stems from our analysis of the interaction between upper secondary and higher education aspirations, from which it might be argued that upper secondary aspiration mediates a pupil's aspirations for higher education. This would imply that the policy focus on raising higher education aspirations and ignoring upper-secondary ones may be fallible. Furthermore, thematic interview analysis revealed three patterns reflecting differing pupil perspectives in regard to higher education aspirations. In a context in which an aspiration to pursue higher education is becoming normative (Schoon, 2010), pupils nevertheless expressed differing views regarding the relative 'inevitability' of higher education. This confirms the argument that somewhat simplistic policy efforts

aimed at a generalised increase in educational aspirations are not likely to achieve their desired effects. In line with the suggestions of Bowers-Brown et al. (2019), the development of policy options should consider the context of both individual pupils and specific schools.

The results of the present study further suggest that current operation-alisations used in quantitative research efforts are not sufficient nor adequate to fully capture the complexity of educational aspirations. Indeed, the use of mixed model designs, and those that entail a longitudinal element in particular, seem to be superior to single-method research for the examination of educational aspirations and should therefore be encouraged. The mixed model design employed in the present study enabled an in-depth exploration of the complex and multi-layered plethora of pathways and voices that lie behind the observed changes in upper secondary education aspirations and the overwhelming stability of higher education aspirations among Croatian pupils. As such, we would argue that the complexity of these voices should be considered in any consideration of educational aspirations by educational policy and failing to do so risks ignoring the valuable insight offered by these perspectives into the nature, determinants and evolution of aspirations as young people progress through their educational journey.

On a more practical level, the findings arising from the present study suggest that special effort is necessary in order to inform pupils about their educational options at both the upper secondary and higher education levels. This effort should incorporate more specific information, advice, and guidance, especially for those pupils who are not certain about their educational and career pathways (Robinson & Salvestrini, 2020). The diversity in both the patterns of pupils' aspirations and their development presented in the results suggest that these services should be tailored to the needs of individuals and groups of pupils, taking into consideration the expectations of youth and the ways they are influenced by their personal, social, economic, and cultural environments (Harrison, 2018). The results of the present study are relevant to the educational systems of many nation-states in southeastern Europe but also in those like Germany and Switzerland, which are characterised by strong differentiation and stratification (Gölz & Wohlkinger, 2019; Juttler et al., 2021).

The present study is characterised by several limitations. First, research was conducted in the Croatian capital where educational aspirations overall may be higher than in the rest of the country thus somewhat limiting the representativeness of its findings. Second, in its quantitative segment, the study uses traditional, and in this paper criticised, aspiration measures. Regardless of these limitations, by employing a longitudinal mixed model design, the study

addresses certain shortcomings of earlier studies and offers a meaningful contribution to this important field of research.

Conclusions

Overall, the research findings of this longitudinal mixed-model study of educational aspirations in the context of the Croatian education system demonstrated that pupils' upper secondary and higher education aspirations should be considered within a mutual interaction, where proximal aspirations regarding upper secondary education are clearly influenced by more distant higher education aspirations and vice versa. Over the two academic years during which pupils approach the transition from single-structure elementary education to differentiated upper secondary education, educational aspirations change at the intra-individual level and are under the influence of pupils' specific interests and the feedback they receive about their achievements but are also based on information pupils acquire about various educational programmes and streams from family, friends and the system. Together, this results in a large diversity of aspirational profiles that elude qualitative description of a 'single preferable educational pathway'. This diversity should be considered in the development of public policy regarding educational aspirations. Future research on aspirations should focus on the application of longitudinal designs to examine changes in aspirations in different educational systems and over longer periods, in particular during the transition to higher education and the labour market, when the interplay of factors stemming from various spheres of a broader ecological system might be even more complex.

Acknowledgement

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